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Original Articles.

SYMPTOMATOLOGY, PATHOLOGY AND TREATMENT OF CHOREIFORM MOVEMENTS.*

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In discussing the subject of chorea and choreiform movements, I can not hope to present to you any very startling new facts, but possibly I may be able to bring forward some observations which may not be generally known.

Lees,[1] in a discussion on chorea before the British Medical Association in 1903, remarked that chorea is often the first of a series of rheumatic attacks, and said that Batten, in 115 cases of chorea, found that whereas the percentage of previous rheumatism was stated to be only 32.2 per cent., three years later so many patients had subsequently suffered from rheumatism that the percentage rose to 43.5, and three years later still it had risen to 53.2 per cent., so that the lapse of six years had increased the percentage by 21 per cent.

Lees said further that pain and swelling of joints, which alone constitute the ordinary idea of rheumatism, are slight and infrequent in the rheumatism of childhood, and the sole but conclusive manifestation may be a subcutaneous nodule, or a small patch of erythema, or a dilated heart with a soft mitral murmur. This seems to make the diagnosis of rheumatism very comprehensive.

Lees seems inclined to believe that chorea is caused by the diplococcus of rheumatism, and that chorea is cerebral rheumatism in the great majority of cases. Indeed, he goes so far as to say that every case of chorea, however mild, ought to be looked on as presumably rheumatic, and that many a mitral stenosis in later life, with its distressful years and its premature death, might have been averted if the practitioner who attended the case of slight chorea in childhood had treated it vigorously as rheumatic.

Chiefly on the authority of G. Sée,[2] at least in France, chorea has been regarded since 1850 as of rheumatic nature, and rheumatism has been supposed to precede it, accompany it, or follow it. Numerous observations have convinced Gilles de la Tourette, Charcot, and others that this relation does not exist, and it seems to me that this relationship has been much exaggerated. In most of my cases I am unable to establish it.

Sydenham's chorea, according to Gilles de la Tourette, does not begin after puberty, and in two of his cases, in which it began at the ages of 16 and 18, respectively, menstruation had not begun. This statement, that chorea does not begin after puberty, I can not accept, and Dr. McCarthy has published some cases in refutation of it, from my service at the Polyclinic Hospital.

Chorea of pregnancy is not Sydenham's chorea, according to Gilles de la Tourette, because the latter does not appear after puberty. Chorea of pregnancy is said to be rare in France, and the cases of chorea of pregnancy are supposed to be examples of the *maladie des tics convulsifs* or of hysterical movements. This opinion is not accepted by Joffroy. He believes there is no specific infectious agent of chorea, and that various infections or auto-intoxications may cause chorea in a person with an abnormal nervous system. One of Joffroy's patients had Sydenham's chorea in early life, and in her first pregnancy the symptoms of typical chorea reappeared. One remark made by Joffroy is of especial interest, viz.: Sydenham's chorea may develop in a hysterical patient, and therefore should not be regarded as hysterical chorea. It is not improbable that many of us would have difficulty in making the proper diagnosis in some cases of this character.

Risien Russell remarks that no properly authenticated case of chorea in a third pregnancy is on record, but Copeman[3] reports a case of this character, although he is in doubt whether it really was chorea gravidarum or whether the chorea should be attributed to the more ordinary causes and the pregnancy regarded as a mere accidental complication.

Wall and Andrews[4] have discussed the causes and treatment of chorea in pregnancy, and give an account of 40 cases, occurring in 37 women, seen at the London Hospital. The cases were believed to be truly choreic in character, as the movements were indistinguishable from those of Sydenham's chorea. In 16 out of the 37 patients, there was a previous history of rheumatism; 23 out of the 37 had previously suffered from chorea. Five only of the 40 cases ended fatally, 2 spontaneously aborted, and in 3 abortion or premature labor was induced. Both patients who spontaneously aborted, and 2 of the 3 in whom labor was induced, died. The mortality reported after induction of labor in these cases, and in those of other authors, is such as to render this procedure undesirable, and it has been discontinued at the London Hospital since 1895.

It seems strange to attribute chorea to syphilis, and

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-fifth Annual Session, June, 1904.

1. British Med. Jour., vol. II, 1903, p. 449.
2. Revue Neurologique, 1900, No. 11, p. 521.
3. A. H. Copeman: British Med. Jour., vol. II, 1903, p. 17.
4. Wall and Andrews: Abstract in Epitome of Current Medical Literature, British Med. Jour., vol. II, 1903, p. 7.

yet this is what Mettler[5] has done. Chorea first appeared in a patient of his when the boy, who had inherited syphilis, was 7 years of age. Four attacks occurred, about a year apart, and each attack was more severe than the previous one. All the usual remedies for chorea failed. Two weeks after the administration of iodid of potassium had been commenced there was a noticeable diminution in the movements, and in a week or two more they ceased entirely.

Sutherland[6] has recently discussed the relation of chorea to Graves' disease. All are agreed, he says, that movements of a choreiform type are sometimes manifested in Graves' disease. He quotes Gowers as saying that such movements must be regarded in some cases as a complication, although in a few cases in childhood true chorea has been supposed to exist. Dieulafoy has expressed the opinion that choreiform movements may occur in Graves' disease, but that there is no true chorea associated with Graves' disease, and that Graves' disease always occurs first.

Sutherland reports two cases to show that Graves' disease may follow chorea. One of the cases came under his observation during the transitional period between chorea and Graves' disease, and he had difficulty in deciding which disease the patient was suffering form. Choreic twitching, goiter, tachycardia, and slight staring of the eyes were the symptoms present.

Sutherland thinks these two diseases depend on a somewhat similar affection of the central nervous system, but the pathology of neither is known.

The association of chorea with epilepsy is uncommon, according to Wollenberg,[7] but hysteria is often found with chorea.

Some neurologists believe a peculiar facies exists in chorea. I have not been able to convince myself that it is common, and in expressing myself in this manner I know that I am not in accord with some whose opinion I value. The description of this choreic facies as given by B. Sachs[8] is as follows: "In advanced cases, if the tongue is protruded the mouth is opened much more widely than necessary, the eyelids and eyebrows are raised in the same effort, and then through a choreic movement of the masseters the tongue may be caught between the teeth." This, I think, is not what is meant by "choreic facies" by all who employ this term.

The choreiform movements of the external ocular muscles may be considered here because, according to Wollenberg, they are not uncommon. They are especially noticeable, he says, when the patient attempts to fix an object, at which time the bulbs are moved forcibly. The pupils are said to be often dilated, but the pupil only on the side of the choreiform movements when these are unilateral; this Wollenberg can not confirm.

A condition of spasms of the levator palpebræ that Posey[9] regarded as choreiform consisted of clonic and rhythmical contractions of these muscles so that widening of the palpebral fissures occurred about fifteen to twenty times in the minute. The contractions were entirely under the control of the will, the patient being able to initiate them or to cause them to cease when commanded to do so. The excursions of both eyes were normal; there was no nystagmus, and vision and accommodation were normal. The movements in Posey's case disappeared as soon as atropin was instilled for refractive purposes. It seems uncertain whether it would be better to class such a case as this among the tics or under chorea.

Choreic spasm of the vocal cords has been described as laryngeal chorea.

Chorea electrica I do not discuss, as most cases described under this title probably belong to convulsive tic.

W. Gordon[10] has found a change in the patellar reflex in chorea in some cases. When the patient is recumbent, if one raises the knee, allowing the heel to rest on the couch, making sure that all the muscles of the limbs are relaxed for the time being, and if then one tests the patellar reflex in the usual way, the foot is found to rise more or less smartly, but instead of falling back immediately it remains suspended for a variable time and then slowly sinks back to its initial position.

Eshner, in this country, has made some observations on the tendon reflexes in chorea, which lead him to support Gordon's views, but I have been unable to convince myself that there is anything characteristic in the patellar reflex in chorea.

In regard to the treatment of Sydenham's chorea, I think confinement to bed is of the greatest importance in severe cases. It is only in this way that we can obtain quiet and freedom from excitement in many of the cases of chorea, and it is especially valuable in severe cases.

Von Bechterew[11] seeks to put the administration of arsenic in chorea on a scientific basis. It has been demonstrated experimentally, he thinks, that arsenic causes a temporary excitability, but later a diminution of the reflexes, and affects first the nerve centers, then the nerves, and finally the muscles. He does not approve of the method recommended by Comby, viz., the administration of large doses of arsenic, and Comby himself had paralysis in one case treated in this way. Von Bechterew gives arsenic, bromid of sodium or potassium and antipyrin together in treating chorea, and in severe cases he adds salicylate of soda, on account of the supposed relation of chorea to rheumatism.

The administration of arsenic should be watched very carefully when the drug is given in chorea, and it is my custom, in prescribing Fowler's solution, to order about two fluid drams and to give directions that it is not to be renewed without permission. A number of cases of arsenical neuritis from Fowler's solution have been reported, and I myself have seen this occurrence. Heubner[12] speaks of a case of chorea followed by neuritis of the lower limbs, in his opinion not due to arsenic because not more than five drops had been given three times daily, and no other signs of arsenical poisoning were detected. The report of this case, though brief, reads as though Heubner believed that the chorea was the cause of the neuritis. Some people show idiosyncrasies toward arsenic, and I have seen herpes zoster develop after Fowler's solution had been given for a week or ten days in small doses, and it is more

5. Mettler: Amer. Jour. of the Med. Sciences, September, 1903, p. 481.
6. Sutherland: Brain, 1903, p. 210.
7. Wollenberg: Nothnagel's System, vol. xii, No. 2.
8. Sachs: Nervous Diseases of Children, Wm. Wood & Co., New York, 1895.
9. Posey: Journal of Nervous and Mental Disease, July, 1902, p. 419.
10. Gordon: British Med. Jour., March 30, 1901, p. 765.
11. Von Bechterew: Centralblatt. f. Nervenheilkunde und Psychiatrie, August, 1900, p. 417.
12. Heubner: Berl. klin. Woch., Dec. 2, 1901, p. 1215.

probable that it was the arsenic and not the chorea that caused the neuritis in Heubner's case.

R. T. Williamson[13] says that in mild cases of chorea he has seen decided improvement by treatment with five minims of peppermint water three times a day, or with very small doses of quinin, one-quarter of a grain. Therefore, while his mild cases have done well on aspirin, he hesitates to attribute the improvement to this drug. In severe and persisting cases, he believes aspirin is of distinct service in diminishing the duration of the affection. Though the drug does not immediately check the choreic movements, its administration is usually followed by distinct improvement in six or seven days after a dose of ten or fifteen grains four times a day has been reached. He has noticed steady and marked improvement following the use of aspirin in severe cases of long duration which have resisted other drugs and methods of treatment.

He usually commences with ten grains, as a powder, twice daily in children over 7 years of age, and rapidly increases up to ten or fifteen grains, according to age, four times a day. Toxic symptoms, like those caused by salicylates, do not often occur, and most children take the large doses without ill effects, but occasionally the drug causes gastric irritation or vomiting, even in doses of five grains. It is important that no alkali should be taken just after the aspirin, otherwise the drug is likely to decompose in the stomach.

Lees[1] thinks that the failure of an antirheumatic treatment in chorea may be because the doses have been too small. The dose of sodium salicylate for a child of from 6 to 10 years should be at first 10 gr., with 20 gr. of sodium bicarbonate. After two or three days the quantity should be increased to 15 gr. and 30 gr., respectively. After two or three days more it may, if necessary, be increased to 20 gr. and 40 gr. These doses should be given every two hours during the day, and every three hours during the night, 10 doses in the 24 hours. Thus the total amount of salicylate given at first is 100 gr. daily, increased to 150 gr., and finally to 200 gr.

A careful watch must be kept for any symptoms of salicylate poisoning, and especially for a peculiar, deep inspiration simulating the "air-hunger" of diabetes. If this occurs, the medicine must be immediately given up. The association of the alkali (sodium bicarbonate) seems to lessen the danger of poisoning.

The large doses of salicylate recommended by Lees did not meet the unconditional approval of the members of the British Medical Association who heard his paper.

The results of the treatment of 180 cases of chorea minor by various methods brought before the Moscow Society for the Study of Children's Diseases,[14] were as follows: The cases (86 in number) treated with arsenic were of the shortest duration, but simple rest lying down, in new surroundings (29 cases) without medicament, proved to be little inferior as a method of cure. Antipyrin (20 cases) was less useful, and bromid (47 cases) and quinin (31 cases) quite useless. The average time of recovery with the arsenical treatment was 63 days. Stress is laid on the great importance of treatment being commenced during the first three weeks of the disease.

The mortality of ordinary chorea is low, but that of chorea gravidarum has been placed by Oppenheim at about 25 per cent., and by Gowers at from 20 to 25 per cent. Death from chorea is usually through exhaustion, and, as exhaustion is not common in simple chorea, the opportunity to study the pathology of the affection is not often given.

Hudovernig examined the nervous tissues from a case of chorea.

The patient, a girl, 16 years old, had chorea about six or seven weeks, when it terminated fatally. Scattered hemorrhages were found throughout the body. The bacteriologic examination of the blood and spinal cord was negative. The vessels of the central nervous system showed some thickening of their walls and there were new formations of vessels and perivascular round-cell infiltration. These changes were most pronounced in the medulla oblongata and pons, especially in the area of the motor tracts. The so-called chorea bodies (*Choreakörperchen*) were found near and remote from the vessels. These are round or oval, structureless formations, varying from the size of a neurogliar cell to ten times this size. They were found especially numerous in the pyramidal tracts. A slight leptomeningitis and ependymitis were observed. The nerve cells of the cerebral cortex showed granular change of the chromophilic elements.

Hudovernig thinks that the toxic and infectious nature of chorea is generally accepted, and he attributes this theory to Leube. Some, however, do not believe that all cases of chorea are of this nature, but especially so are the postpuerperal or postrheumatic cases. This opinion has been strengthened by the finding of diplococci or staphylococci in cases of chorea (Pianese, Dana, H. Meyer, Geddes and Clinch).

Hudovernig has not found any case of chorea with a chemical examination of the blood reported, but he finds that encephalitis and meningitis are common in chorea. In his case the alteration of the nerve cells of the cerebral cortex was intense and in all parts of the cortex, and this indicated that all parts of the brain were exposed to the injurious substance.

The only other case of chorea in which the method of Nissl was employed that Hudovernig knows of is the case of Silvestrini and Daddi. These investigators found rounding off of the pyramidal cells, chromatolysis and pigment formation within the cells.

Elischer seems to have been the first to find the "chorea bodies" in the brain in chorea, although this author did not attribute much importance to them. He found these bodies in rows or groups, having a faintly concentric arrangement, and always near blood vessels. Flechsig found similar bodies in the globus pallidus and in the lymph sheaths in four cases of chorea. Jakowenko, in six cases of chorea gravis, found these bodies in the lenticular nucleus, and in one case also in the optic thalamus and caudate nucleus. All six patients had also acute delirium.

Jakowenko studied the brain in a case of acute delirium without chorea and found some similar bodies, with, however, a different chemical reaction. Laufenauer also found these bodies in the brain from five cases of chorea; they were chiefly in the basal ganglia, but were found in the entire central nervous system. Wollenberg found these bodies in cases not of chorea as well as in chorea, and he concludes that in some cases of chorea, simple chorea, as well as chorea with delirium, they are found in the globus pallidus; they are not characteristic of chorea, as they may occur in other diseases. These bodies are probably caused by calcification of an organic ground substance (*Grundsubstanz*), concerning the nature of which a positive opinion can not be formed. Von Bechterew and Dana also have found the chorea

13. Williamson: Lancet, Aug. 22, 1903, p. 526.
14. Abstract in Epitome of Current Medical Literature, British Med. Jour., vol. ii, 1903, p. 27.

bodies in chorea, but they are not present in every case of chorea.

Hudovernig[15] believes that the lesions of chorea minor are not confined to the same part of the brain in every case, although the basal ganglia are often affected; but that in every case the motor tracts are irritated in some part of their course.

His conclusions are: Chorea minor is an infectious disease and the infection is hematogenous. In the mild cases the infection causes a disturbance of nutrition, but in more severe cases it causes changes in the blood vessels and formation of colloid bodies, the latter being an evidence of a severe form of the disease. "Chorea bodies" are characteristic of chorea, although they are not found in every case. Choreiform movements are always the expression of direct or indirect irritation of the pyramidal tracts at some part of their course.

Hudovernig found that the "chorea bodies" have a great affinity for hematoxylin, stain pale red with carmin, remain unstained by the Nissl method, and do not give the amyloid reaction. He does not discuss the resemblance of these bodies to the so-called amyloid bodies, but from his description and drawings they seem to resemble them closely.

In examining some sections from a case of Sydenham's chorea, prepared by Dr. J. H. W. Rhein, we found small, recent hemorrhages in the cerebral cortex.

Dana,[16] in a case of Sydenham's chorea, found chronic leptomeningitis of the convexity of the brain, hyaline bodies in the brain cortex, slight meningitis of the upper part of the spinal cord, slight meningo-encephalitis, and diplococci in the proliferating tissue between the meninges and the brain.

In a case of chorea gravis, Geddes and Clinch[17] found great congestion of the meninges, which had resulted in severe hemorrhages. The basal ganglia showed no congestion to the naked eye. Intense degeneration of cells and of the myelin sheaths in the brain was found, but the appearances were regarded as a result, rather than as a cause, of the symptoms, and resembled the findings obtained in animals deprived of sleep. Some of the blood vessels were much thickened.

A case in which I have been able to make a microscopic examination of the brain is as follows: The patient, a girl, 16 years old, had had chorea for about five weeks. She had inframammary tenderness and was unable to talk coherently. A systolic murmur was heard at the apex. She had violent choreiform movements of the entire body, including the face. The head was tossed from side to side, the arms and legs were violently moved. At times she was comparatively quiet, while at other times the whole body was tossed violently from side to side, the head and limbs striking against the side of the bed. These violent attacks did not occur at regular intervals and were increased by observation.

Family History.—The family was neurotic, and the father had been in an insane asylum. About six weeks before the girl came to the hospital her household goods had been sold by the sheriff, and she had been much worried by this.

Present Illness.—She had had chorea only about ten days before admission (May 30, 1901). It began with twitching of the muscles on one side of the body, but within a few days the other side became involved.

Progress of Disease.—While in the hospital the girl had delusions. She believed her mother and uncle had visited her, although they had not. The movements were absent during sleep. Later she became unconscious of her surroundings, and the movements became exceedingly violent.

She died May 31, 1901. The nurse found the patient dead, although five minutes previously she had been sleeping and seemed better. Directly after death the temperature was 109.

Necropsy.—June 1, 1901. Pathologist, Dr. Pearce. The pathologic findings were chronic mitral endocarditis, acute parenchymatous nephritis, fatty degeneration of liver, edema and congestion of lungs, hypoplasia of heart and aorta.

The nerve cells of the paracentral lobules stained very diffusely with thionin and a small round cell infiltration was found about the small vessels of the cortex, but not within the pia. The microscopical examination has not been completed.

Huntingdon's chorea is regarded now by most physicians as distinct from the Sydenham form, although Charcot held a different opinion.

It has been pointed out that intentional movements sometimes diminish the jerkings of Huntingdon's chorea, whereas they do not in Sydenham's chorea (Ewald, Peretti, Lannois, and others); and that the muscles of the eyeball are not implicated in Huntingdon's chorea, whereas they are in Sydenham's form. The tendon reflexes often have been found exaggerated in Huntingdon's chorea (Biernacki, v. Sölder, Wollenberg).

In many cases of Huntingdon's chorea the neuroglia has been found proliferated and the gyri atrophied, and a resemblance has been pointed out to the alteration of paretic dementia, although in the latter the frontal lobe is chiefly affected and in the former the motor area.

In a case of Huntingdon's chorea examined by Stier, the brain was atrophied, the small, round cells were more numerous in the second and third cortical layers, especially in the motor regions, the neuroglia cells also were more numerous, the tangential fibers were diminished in number, and the small, pyramidal cells of the second and third cortical layers presented degeneration and diminution in number. He was unable to find the accumulation of small, round cells especially about the vessels, and the alteration of the membranes described by others. He says that, in all cases, an increase of the glia cells, or of small, round cells, was found. In some cases hemorrhages have been observed. In most cases the cortical motor region has been affected, and in all cases the nerve cells have been diseased, even though the alteration was slight in some cases. The cells of Betz escape, or are little degenerated. In most cases the walls of the vessels have been thickened.

Stier[18] goes so far as to say that no one in the last twenty years has doubted that the cerebral cortex is the seat of Huntingdon's chorea.

The disease begins late in life, with proliferation of the neuroglia in the motor centers, either diffusely or in areas, and is found especially in the second and third cortical layers; simultaneously, the vessels become diseased, and cellular infiltration into the perivascular and pericellular spaces, and sometimes hemorrhages occur. The small and medium size ganglion cells become diseased, whereas the large nerve cells remain intact.

In a case of Huntingdon's chorea that I examined small collections of round nuclei were seen about some of the capillaries of the cortex of the paracentral lobule, and also elsewhere in the cortex not about the vessels.

It is difficult to form a judgment concerning the cells of Betz, as the sections were not stained by Nissl's

15. Hudovernig: Arch. für Psych., vol. xxxvii, No. 1, p. 86.
16. Amer. Jour. of the Med. Sci., January, 1894, p. 31.
17. Journal of Mental Sciences, 1898, p. 811.
18. E. Stier: Arch. für Psych., vol. xxxvii, No. 1, p. 62.

method, but some of them were smaller than normal and contained eccentric nuclei.

The condition of postapoplectic hemihypertonia, so far as I know, has been reported in this country only by me and later in a case from my clinic described by McCarthy. This form of spasm is very different from athetosis. It is of tonic character, affecting one side of the body, is associated with a little weakness, but not with contractures, develops after an apoplectic insult, and probably is due to irritation of the motor fibers at some point below the motor cortex.

Von Bechterew deserves the credit for clearly recognizing and first describing the condition, and has spoken of it as hemitonia apoplectica, but inasmuch as it affects only one side of the body and develops after an apoplectic attack, I have suggested that it might be called more appropriately hemihypertonia postapoplectica. The disorder is such a remarkable one that I cite a portion of the report of my case.[19]

The patient is a well-developed woman with no distinct atrophy of any of the muscles. Her gait is a little spastic on account of the spastic condition of the right lower limb, but she does not swing this limb from the hip, as is so commonly seen in hemiplegia, nor does she drag it. Her station is good. The right knee-jerk is restrained on account of the spasticity of the lower limb; the left is normal. The toes of the right foot are usually flexed, but the condition is not one of contracture; it is one of tonic spasm and every few moments the degree of tonicity varies. No athetoid movements are seen in the toes. The right foot appears to be about the same size as the left.

When the right hand is at rest in her lap it is often slightly flexed at the wrist, and the fingers slightly flexed at all the articulations. The hand may remain in this position a long time, while the limb is at rest, without any evidence of athetoid movement. If she attempts to elevate the right upper limb from the shoulder she accomplishes the movement without difficulty, but the right wrist becomes strongly flexed, the hand may be drawn around so that the back of the hand is turned away from the body of the patient, or at other times the palm may be turned away from her body. The condition is one of tonic spasm, and the spasms vary greatly in degree from time to time, and are increased by excitement. When she was told to make some movement with her left hand, such as removing her shoe, the position of the right hand and fingers changed from one of flexion to one of extension; the fingers were fully extended, but still in tonic spasm. At no time did this condition of great hypertonicity disappear from the right hand; it varied merely in degree, and the position of the hand changed according as the spasm predominated in one group of muscles or another, but the flexors were always most involved. It was impossible at any time to detect any athetoid movement. She is able to carry objects suspended from her right hand, and can perform such work as wringing clothes, the powerful grasp of the right hand enabling her to hold the clothes firmly. She can not venture to hold anything breakable with the right hand, as the spasm may relax and the object fall to the floor. When quiet and unobserved the spasm in the right hand is much lessened in intensity, and she may be able to use the hand to a surprising extent, according to the statement of her sister. At times the hand is forcibly flexed at the wrist, the fingers are flexed, and the thumb is firmly held between the middle and ring fingers; the hand may then be rotated towards the right or left; at other times the hand is rotated at the wrist and the fingers are partially extended; at other times the hand is extended at the wrist, the thumb flexed into the palm and the fingers firmly flexed on the thumb. At no time has the spasm of the extensors predominated over that of the flexors.

Involuntary movements in the paralyzed side, truly choreiform in character, occurring after hemiplegia in the adult must be very rare.

Bonhoeffer remarks that Charcot called attention to the frequent association of hemianesthesia with posthemiplegic chorea, and concluded that in front of the *carrefour sensitif* is a bundle of fibers, a lesion of which causes hemichorea. Gowers thought that a lesion of the optic thalamus is followed by chorea. Kahler and Pick believed that the choreiform movements are caused by irritation of the pyramidal tract. In Bonhoeffer's case of chorea resulting from carcinoma in the superior cerebellar peduncles the movements were chiefly unilateral, but the case differs from most of those of hemichorea reported in the absence of hemiplegia or hemiparesis and of sensory disturbances.

In some cases of hemichorea the movements at times are more choreiform, at other times more athetotic.

The cases of choreiform movements resulting from lesions of the cerebral cortex collected by Bonhoeffer are not very convincing. In the cases cited by him in which hemichorea occurred from lesions below the optic thalamus the lesions involved the nucleus ruber or superior cerebellar peduncles. Lesions in the lower part of the medulla oblongata or in the spinal cord, without associated cerebral lesions, apparently never cause choreiform movements, and this is against Kahler and Pick's theory. Lesions in front of the knee of the internal capsule and in front of the projection fibers of the central gyri, do not seem to cause choreiform movements.

Hemiplegia is common, hemichorea is rare; it is hard to understand why the latter should be so if Kahler and Pick's theory be correct.

Lesions of the cerebellum, Bonhoeffer[20] finds, cause choreiform movements, and he says that in all cases of chorea caused by lesions the fibers of the superior cerebellar peduncles have been implicated.

19. Spiller: Philadelphia Med. Jour., Dec. 16, 1899.

CONVULSIVE TIC.*

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From the great and rather confused mass of affections characterized by excess or perversion of movement, one group or sub-group is coming to be pretty well defined: a variety of hyperkinesia which might well be called simply tic if it were not for the occasional use of this word as a contraction of *tic douloureux*, painful tic, to designate trifacial neuralgia. This being the case, it seems best to call the tic of movement convulsive tic. I believe that ultimately the qualifying word convulsive will be dropped and that the term tic will come to mean motor tic exclusively. In this paper I shall often so use it.

Convulsive tic embraces movements varying as regards location, extent, violence, amplitude, frequence and

20. Bonhoeffer: Monatsschrift für Psychiatrie und Neurologie, vol. i, p. 6.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-fifth Annual Session, June, 1904.

duration. It may affect any part of the voluntary muscular system, and in the cases of extreme severity, called by Gilles de la Tourette *maladie des tics*—the disease of tics—the entire body is affected by peculiar, sudden, more or less violent, intempestive, malapropos gestures, grimaces, contortions.

Although the tic group embraces such a great variety of movements, and although now and again an individual case may present great difficulties of diagnosis, and show that here, as elsewhere, the dividing line may be hard to draw, none the less are the great traits of tic characteristic and the diagnosis generally easy.

I shall attempt no definition of tic, as doubtless it would be too faulty to be useful. A brief description of the disease, with a few comments, will serve the present purpose.

In the main, convulsive tic may be said to be a habit spasm, but it is more than a habit, less than a spasm. Strictly speaking, it is no spasm at all. It is a movement based on an uncontrolled and, except for a brief space, uncontrollable impulsion. It is the motor impersonation of an imperative inclination, the motor gratification of an imperative appetite. To state it another way, the motor phenomena are the objective manifestation of tic; they do not constitute the disease. While the movements of tic are for the greater part fairly beyond the control of the patient, they are not entirely so, and in this they are trenchantly separated from true spasm. In its inception I believe that a tic is always voluntary. With time it becomes more and more automatic, passes more and more into the subconscious, more and more beyond the will, but a volitional element always remains. In other words, tic is of psychic origin. When Brissaud called spasmodic torticollis, which is a variety of tic, "mental torticollis," he coined an illuminating term.

The expression convulsive tic implies a motor malady. This is only half of the truth, and, if one may be pardoned a hibernianism, the lesser half. In nearly every case of tic the original cause is sensory. Not only that; very often it is the sensory element which perpetuates the spasmodic movement and makes it hard to cure. Even though each movement be not the direct response to a sensation, one is pretty sure to find that the execution of the movement gives the patient a certain sense of relief or satisfaction, which shows a sensory foundation for the trouble.

Let me illustrate. In crossing the great American desert a man suffers greatly from alkali dust. It irritates his eyes, he develops some conjunctivitis and blinks constantly. Having reached the coast, the palpebral spasm continues even after the conjunctivitis is cured. The constantly recurring spasm irritates the conjunctiva, the sensation from the conjunctiva starts the spasm, and thus is developed a most rebellious habit spasm, blepharospasm, tic.

In one of my clinics I saw an exactly analogous case caused by a workman digging a ditch in dry sand during windy weather. The vicious sequence was as follows: Repeated puffs of sand in the eyes, repeated violent closing of the lids, repetition of this closure after work, when there was no sand in the eyes, still some slight discomfort, enough to start the impulse to close the lids, perpetuation of an uncontrollable impulse to blink the lids tightly together.

A boy has an ill-fitting collar or a coat too tight in the armhole. This begets a twisting drawing of the neck, with tilting of the chin or a writhing shrug of the shoulder. The collar is removed, the armhole enlarged, but the abnormal movement continues.

A child has nasal catarrh which causes a sense of discomfort about the nostrils. In consequence there is a twitching and drawing of the nose and lips. The catarrh is cured, the movements remain.

Because of an ordinary "stiff neck" a man repeatedly turns his head in a certain direction. Putting a little strain on certain muscles affords a certain degree or sort of relief. Or, in consequence of the sore muscles, he carries the head in a constrained, unnatural position. After recovery of the myalgia the patient continues to carry the head to one side or to repeatedly twist it in a certain direction. This tendency becomes more than a habit. It is a veritable obsession, not to be resisted, causes a sense of acute dissatisfaction when resisted and when yielded to affords a certain sense of relief. This is tic.

A number of times I have known some peculiar motion incidental to the patient's occupation to develop into a tic. For instance, within a few days I have examined a waiter with spasmodic torticollis. His affection draws the head over and tilts the chin into just the attitude he assumes in carrying a tray, heavy with dishes. However, in such cases I think the discomfort of fatigue or strain has much more to do with the genesis of tic than does the mere repetition of certain muscular contractions.

In a few instances, especially in children, the inception of a tic lies in imitation. Afterward the sense of relief attained by executing the movement or the sensory result of the movement itself serves to perpetuate it. In other cases it is simply impossible to discover what the exciting cause has been. It has been so slight or so transient, or both, as to escape the memory of the patient if, indeed, he was conscious of it at the time.

A most important element in the genesis of tic, and equally a matter of paramount importance in prognosis and treatment, is the psychic state or mental constitution of the patient. Tens of thousands of children have nasal catarrh and ill-fitting clothes, thousands of adults have rheumatic stiffness about the neck and shoulders, very few acquire tic. At present hundreds of thousands of women are wearing large hats so poorly balanced on the head as to cause a feeling of insecurity or slight discomfort. Any one who will take the trouble to look may see many of these women give the head a little jerk or shake because of the sensations produced by this maladjusted headgear. Of these many, assuredly a few will develop a tic. I have seen it—a tic which will continue when fashion shall have returned to the compact close-fitting toque.

But why, of the very many, do only some twitch the head? Because they are more sensitive to impressions and more readily translate a sensation into motion. Of the relatively few who jerk, why will only very few, indeed, develop a jerk neurosis? Simply because of a still higher degree of hypersensitiveness and nervous instability. The subjects of tic are too sensitive, too impressionable, their sensori-motor mechanism is too glib and they lack in instinctive as well as voluntary inhibition; else they would not have tic. Of this I shall have something more to say in connection with prognosis and treatment.

CHARACTERISTICS OF THE MOVEMENTS.

Now, as to the characteristics of the movements themselves, it may first be said that they represent natural acts or that they are imitations of natural acts.

I had almost said physiologic acts, but the term is too strong. It may be physiologic to pinch the eyelids tightly together when a foreign body is blown into the eye, but to wriggle the shoulder about because the sleeve is too tight, to rotate and twist the head about because of a discomfort in the neck, or to make grimaces because of dessicated mucus within the nostrils is scarcely within the bounds of physiology. Still these acts are hardly pathologic. They are strictly logical, they are co-ordinate, the legitimate result of a given cause. If the source of irritation having been removed the movement is continued, it is unnatural, pathologic. If, in addition, it grows more imperative, can not be resisted, becomes automatic or subconscious and carries with it a sense of relief, or at least relief as compared with the tension and discomfort of resistance, it constitutes a tic.

But the movement itself remains the same. The same muscles act in the same way. The movement is purposive. It is an action perfectly adapted to an imaginary end or to an object which has disappeared. It shows the same co-ordination, generally the same duration, but may become more tempestuous. Such a movement is in marked contrast to the inco-ordinate purposeless jerkings and writhings of chorea, the vermicular twistings of athetosis, the rhythmic oscillations of hysteria, the fascicular twitching of paramyoclonus and the anatomically localized true spasm.

The movements of a tic are always a repetition of the same act. This statement needs some explanation: *a*. The movements may vary in degree, some of them being more or less abortive, others more or less complete *b*. As time passes they incline to become more intense or violent. *c*. A tic also tends to spread to adjoining muscles or muscular groups and to add to itself correlated physiologic acts. A tic of the nose is apt to soon involve the lips and adjoining facial muscles. When sounds of snuffing or sniffling are produced, pharyngeal and laryngeal sounds may be expected, if the disease continues. *d*. In the *maladie des tics*, in which the whole body is affected, the abnormal movement may be now of this part, now of that. A grimace is followed by a shrug, that by a grunting sound and this by a kick.

With these qualifications the dictum beginning the foregoing paragraph holds good; that is, a tic is the repetition of the same sort of thing in the same place. This, again, is in marked contrast to chorea in which no two movements are exactly alike.

The third trait of tic to which I beg to call attention is one already mentioned; namely, it can be voluntarily restrained to some extent, and in many cases can be quite controlled for a time by some maneuver which the patient has instinctively or deliberately hit on. These tricks of control are oftenest seen in cases of spasmodic torticollis. Frequently they are done unconsciously by the patient, but may nearly always be found. A few examples will illustrate:

An orthopedist friend was exhibiting to a medical society an apparatus for torticollis, and, incidentally, a patient. I asked the latter in what way he could control his spasm. He said "in no way;" that he couldn't control it at all. Even as he spoke he passed his right hand to the back of his head and grasped the occipital region in the hollow of his hand. With this mere semblance of restraint, the drawing and rotation of the head ceased at once. A patient of my own, when asked to undress for the first examination, stood with his head propped against the edge of an open door, as he slowly got out of his clothes. I asked him why he did that. He replied that it was the only way of steadying his head while he was on his feet with both hands occupied.

Many of these patients are comparatively comfortable while seated in a high-backed chair, where the head can be rested. With numerous others a favorite posture is with the chin resting in the crotch between thumb and flexed second finger, while the index is extended upward along the cheek. One of my patients had not for years appeared on the street without a certain straight-handled umbrella. This he held perpendicularly, with the handle alongside his nose, and with this mere trick of restraint was able to go about with his head relatively straight and quiet. In a remarkable lecture, Brissaud[1] has given some interesting examples of the restraining action of the touch of a finger, etc., and Meige and Feindel[2] quote many more; but one of my own cases showed the potency of an idea in restraining tic to a degree that, I think, must be unique.

The patient was a man of 41 years, who had been suffering for eight months with spasmodic torticollis, which had become very bad. His head rotated to the right. During my examination, as one of the strong contractions came on, I asked him to turn his head to the left. He said he could not possibly do so during the spasm. I told him that he could, and, opening a blade of my pocket knife, said I would immediately demonstrate that I was right. He at once saw that I meant to prick the side of his face to make him turn it the other way, and assured me that that was not necessary; that he had an easier and more comfortable way. He extended his right arm to the right, crooked the elbow and wrist so as to point the extended index finger at his face, just as he would have held a pistol to shoot off the end of his nose, and then moved this hand rather quickly toward the nose. As he did so the head rotated toward the left, as if moved by an invisible power, and assumed a normal position. At no time was the finger nearer than eight inches from the face.

In accord with the foregoing is the fact that tic does not derange voluntary movements. A man with a tic, never so severe, of the right arm and shoulder shows nothing of it in his writing. The tic does not catch him unawares. When the impulsion to tic can no longer be bridled, he takes pen from paper, executes his tic, and then resumes writing. I know a successful artist who is afflicted with a bad tic of the head and arms. It delays his work more or less, but never deflects stroke of pencil or touch of brush. This alternation of constraint and compliance is something very striking. After unusually prolonged or complete voluntary control of the abnormal movements, especially if the patient can escape observation for a few moments, he will often recompense himself by a perfect debauch of tics until the craving is satisfied.

Tic is diminished by rest, quiet, preoccupation or mental diversion. On the other hand, it is made worse by self-consciousness, observation by others, excitement and other emotional states, pain and fatigue. During sleep it disappears entirely.

PROGNOSIS.

The prognosis of convulsive tic conforms to no rule. In children, ordinarily it is good. In fact, most of these little patients recover without treatment or with treatment for chorea, which amounts to no treatment

1. Leçons sur les maladies nerveuses, 1895, p. 502.
2. Les Tics et Leur Traitement, Paris, 1902.

at all. Nevertheless, a tic begun in childhood may continue through life. Most frequently when it begins at an early age and continues for many years, the location changes. Many of my cases have shown this. A tic about the nose ceases, or nearly so, to be succeeded by a lifting of the eyebrows. This passes away, the patient becomes possessed of an impulsion to shrug a shoulder, and this is followed by a sniffing or hemming tic. Finally, after years of "ticing," such a patient's tendency may crystallize into one permanent set of movements that continue to the end or until the degenerative age of dullness and slow reaction.

In adults, tic is a most rebellious disease. The more severe and chronic cases are seldom cured. The slighter ones yield to treatment fairly well. Occasionally the trouble disappears of itself or is simply controlled by the efforts of the patient. Of the tics more difficult to cure, spasmodic torticollis is the most frequent. In spite of a few favorable reports, Gilles de la Tourette's disease may be said to be incurable.

To consider the why and wherefore of this sinister outlook would involve a discussion of the nature, etiology and genesis of the affection. Such a discussion is not for a short paper, but I may mention two elements that bear on the prognosis. First, the nature of the patient; second, the nature of the disorder.

The patient is generally a nervous, impatient, hypersensitive individual in unstable equilibrium. Small things upset him and every upsetting makes him the more unstable. Mentally, he is unsatisfactory. His emotions are uncontrolled and he confuses desire with judgment. Ignorant of premises, he forms opinions none the less positive because groundless. The victim of impulse, appetite and feelings, he never knows what he is going to do or be.*

The disease has been called a psychomotor neurosis. I would prefer to call it a sensori-psychomotor derangement. Sensation is the beginning. This acts as a psychic excitant and the psychic state, or maybe the sensation and this together, as a motor excitant. The movement gives rise to sensation, which again starts the endless chain. Each step in the order of events incites the next, so that it seems as natural for a tic to continue as for the planets to pursue their orbits.

To these two elemental factors of a bad prognosis, I might add a third, applicable to cases in children: unstable, unreasonable parents. A child with tic is likely to be the spoiled child of spoiled parents. To an unfortunate heritage is added unwise rearing. What began as a natural, but unnecessary, movement is allowed to become a habit and then an infirmity.

In connection with the prognosis I may note that I knew one patient with severe generalized tic who committed suicide rather than longer endure his malady. Another patient, a lady with spasmodic torticollis which had not responded to rather prolonged treatment, died suddenly under circumstances strongly indicative of suicide. She had assured me that if she were not cured within a certain time, she would terminate her life, and she died at the end of the appointed time.

TREATMENT.

Given the above dubious prognosis, the question of treatment is somewhat embarrassing. It is the more so because my own efforts to cure severe tic, notably spasmodic torticollis, have been anything but satisfactory.

In children, if directions can be and will be carried out, most cases yield promptly. In accordance with what I have said concerning the cause of the affection, I begin with a careful search for any sensory state which would naturally cause the movement exhibited by the patient. About the face, the eyes and nose are the most fruitful sources of trouble, but all parts must be scrutinized. About the neck and shoulders, rheumatism is a frequent cause. Skin eruptions, ill-fitting clothing, traumatism are not unusual. Having removed the sensory excitant, I ordinarily adopt one of two methods: hypnotism or systematic stimulation of inhibition. The latter means constantly reminding the child of his tic, together with a judicious combination of penalty and reward. For successful effort he is recompensed, for letting go of himself he is punished, but both must be arranged so as to keep consciousness vigilant. That is, every single movement is to be accounted for. Rewards and penalties alike must be frequent and small. I have never known whipping a child to cure a tic. Many times I have known it to fail. But simply to prick the patient with a pin every time he made a grimace or jerked his head I have known to be perfectly effective.

To rephrase it: the tic is the result of a strong but subconscious impulse. It is followed by a certain amount of satisfaction or relief, likewise scarcely appreciated. It is, if you please, the instinctive gratification of an unconscious craving. Now, if with each and every gratification there occurs a disagreeable or painful impression, this soon impresses itself on consciousness and coincident with the impulse to tic comes the impulse to forbear. As soon as the latter impulse regularly exceeds the former, the tic ceases. When the former ceases to be, the tic is cured.

This method I prefer to hypnotism if parents or attendants will carry it out. It is the more natural and, I think, the more permanently effective. Sometimes it is easier and quicker to hypnotize. Under some circumstances it is about the only available way. Most children may be hypnotized, and if the sittings can be sufficiently frequent, a tic may be expected to improve rapidly.

As before stated, treatment of adults is unsatisfactory. To enumerate the almost countless forms of tic and then consider all the means of controlling them would require a treatise as tedious as it would be lengthy.

Principles of treatment must be the same for the adult as for the child. The material to work on, however, is vastly different. Putting aside the mild tics which are scarcely more than habits, stereotypes, as the French call them, excluding the more complex syndrome of Gilles de la Tourette and taking spasmodic torticollis as a type of the more severe and refractory tic of the adult, I beg to submit a few remarks on its treatment. Before doing so, however, I should state that while spasmodic torticollis conforms to all of the essential standards of tic, it seems in some respects to be in a class by itself. It is the only tic which, with any frequency, is consistently tonic. Sometimes the nervous instability, upon which I have laid much stress, is scarcely apparent. The discomfort may amount to decided pain; very rare in other tics. Finally, this form of tic, after persisting for many years, may gradually take on characters suggestive of degenerative

* It seems proper to add that this impressionability and emotional instability may not be very apparent and their presence sincerely denied by patient and friends. More than once I have been unable to uncover the neurotic tendency in one interview. Repeated observation has never failed to reveal it.

disease of the nervous system. I[3] have now under observation a man who many years ago began to have what was apparently an ordinary spasmodic torticollis. Indeed, an eminent surgeon operated on him for this affection. He has gradually grown worse until now nearly all the muscles of the body are involved in irregular clonic and tonic contractions. He walks but poorly, has quite imperfect use of the arms, and the trunk is distorted with what appear to be permanent organic deformities.

Operative treatment has been notoriously unsatisfactory. Indeed, torticollis is the only tic for which operation has been done with any frequency. Based on the erroneous idea that spasmodic wry neck is a local spasm and that paralysis of the contracting muscles will render the movement impossible, the procedure was, from the first, doomed to failure. The affection is a physiologic, not an anatomic hyperkinesia, and no operation yet devised can abolish movements of the head when the patient, consciously or unconsciously, chooses to make them. About two years ago I saw a case of progressive muscular atrophy in which both sternomastoids and both trapezii, as well as some other neck muscles, had quite disappeared. There was no normal movement of the head or neck which the patient could not execute.

This is not to say that operation has never succeeded. It has. Personally, I have never seen a success, but I have heard of one or two and some are on record. When operation succeeds it is not by way of paralysis but because the pain, fixation, and psychic impression inseparable from the operation serve to break up the habit. Practically the same conditions may be attained by milder means without the danger of aggravating the trouble. That operation makes these cases worse is no uncommon experience.

I have known a typical tic of the neck muscles to be caused *de novo* by operation on the spinal accessory nerve. Nearly two years ago a gentleman of 36 years was referred to me for an opinion. The case was a sufficiently typical one of congenital cerebral quadriplegia (Little's disease) of the very mildest type and without mental impairment. As in so many of these cases, there was some excess of associated movement and considerable, though not severe, irregular rolling, jerking movement of the head and neck. This was increased by conversation, by active use of the hands, and by excitement. It constituted no disability, was somewhat annoying, but hurt the patient's vanity more than anything else. The question of operation had arisen. It was easy to see that the sternomastoid and upper trapezius on one side were the muscles most active in causing the movements, and I told the patient that paralyzing these muscles might make the movement somewhat less noticeable. The operation was well done, but it served only to add a new trouble to the old. The discomfort of the wound, together with the anxiety and uncertainty regarding the result, or some other effect, were sufficient to start a spasmodic torticollis in an individual already nervous, impressionable and unstable. The new disorder showed all of the typical characteristics of "mental torticollis," or tic.

My own idea of the surgical treatment of spasmodic torticollis would be section of the sensory roots of the cervical spinal nerves. All sensation from the affected area having been cut off, I believe that the so-called "spasm," the result of sensory stimuli, could easily be controlled. Of course, this operation is too serious to be recommended for a disease not dangerous to life.

So far as I can ascertain, the mechanical or orthopedic treatment of spasmodic torticollis has been no more successful than the operative. I know of no case thus cured, although I have learned of a very few that have been improved.

My own attempts have been along various lines. Some years ago injections of atropin into the affected muscles were advised. I tried them, and they made my patients worse. The muscular soreness produced by the injection simply increased the local discomfort and the patient's self-consciousness. The ordinary sedatives I have tried, and they have constantly failed in my hands, as in others. A few years ago, in a discussion before the American Neurological Association, conium was highly spoken of. In my next case I gave it a faithful trial. At first there was some relief, but this was transient, and subsequent doses, carried to the toxic limit, accomplished nothing.

In one bad case I tried the opium-bromid treatment, as advised by Flechsig for epilepsy. It was of no avail.[4] During the course of opium the patient was not uncomfortable. When I changed to the bromid he did not take it well, and was soon as bad as ever. Once I nearly cured a bad case of many years standing by means of hypnotism. For several weeks the case progressed in a way most satisfactory to me and wonderful to the patient. Then, contrary to my strict injunctions, he had a long interview with a relative. This made him more nervous, which I at once noticed and finally elicited the cause. My reprimand was resented. Because of his frame of mind, the following sitting was less successful than the preceding ones. The lack of success engendered lack of confidence, and the next sitting accomplished nothing. Disappointment, regret, loss of hope, despair, followed in turn and the patient returned to his home nearly as bad as when he came.

Two years ago I saw, in London, a case of Bastian's practically, not absolutely, cured by keeping the patient asleep most of the time for several weeks. I came home and tried the method on an old and very rebellious case. The result was gratifying. At the end of the sleep period the patient was very much better and then, under the exercises to be mentioned presently, he continued to improve. He returned to work with only a trace of his trouble, but a perfect recovery was not obtained.

The very next time I used this treatment, dismal failure was the result. Even when the patient was asleep 18 hours out of the 24, during waking moments the spasm asserted itself with a vengeance. And, as the effect of the drugs wore off, the trouble resumed its wonted severity.

My friend, Dr. Singer, formerly of London, now of Omaha, recently informed me that in two cases he had had excellent results from suspension. I immediately tried it, but before the treatment was well under way, the patient got homesick and left the hospital.

Meige and Feindel have elaborated a system of exercises advocated by Brissaud and have treated a great many cases in this way. Their results have been good, the method is rational and constitutes a real addition to our means of combating a most troublesome disorder. To go into detail would require a separate paper. A full description will be found in the excellent and

3. Revue Neurologique, April 30, 1902, p. 351. For a remarkable and wonderfully full discussion of tic, see Revue Neurologique, Aug. 31, 1902, p. 766, et seq.

4. I have lately learned that the same treatment has been advised by others.

exhaustive treatise by these gentlemen.[5] Stated simply, the system is one of dynamic and static exercises, gradually teaching the patient to move and hold his head properly. This is no easy task. Great patience, persistence, tact and good judgment on the part of the physician; patience, persistence, courage and confidence on the part of the patient are the requisites for success. While the advocates of the treatment are loud in its praises, not to say enthusiastic in their propaganda, their statements will be found to contain sundry qualifying terms and conservative cautions. I must confess that their reports seem to lack definite statement of complete cures.

With this, as with all other methods of treating spasmodic torticollis, the great drawback is the patient himself. As I have before indicated, he is generally a neuropath *par excellence*. He is hypersensitive, too impressionable, erratic, poorly balanced. His enthusiasm is transient, his faith evanescent, his disappointment overwhelming, his desires paramount. Although he may be intellectually brilliant, he is mentally puerile; he can not control himself and is most difficult to control. Just when the treatment, whatever it may be, is running smoothly, some whim, feeling, emotion, desire or opinion of the patient intervenes to derange the whole plan and withhold success. Within an hour such a patient's whole mental attitude may be quite reversed. From hearty co-operation with his physician he changes to skepticism, distrust, mutiny, perhaps as quickly to return to allegiance and obedience.

My present opinion is that the soporific treatment, followed by the educational exercises of Brissaud, will be found effective in more cases than any other method of treatment. By means of veronal, trional, chloral and bromid, the drug to be changed every few days, the patient is kept asleep nearly all of the time for three or four weeks. As the waking time increases, he is shown how to practice moving the head slowly, rhythmically and normally in every direction. He is also to practice holding it quietly in any given position. At first the exercises must be executed under supervision. Later he can manage them himself, preferably with the aid of a mirror.

HYSTERICAL MOVEMENTS.*

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I understand that in assigning me the subject of hysterical movements it was not intended to include the phenomena of the ordinary hysterical convulsion, but rather to bring up for discussion such motions of hysterical origin as may best be considered in comparison with chorea and convulsive tic. Thus restricted the subject is a very important but very difficult one. I would not undertake to say anything about it had it not been assigned to me.

Certain general principles are applicable to all such movements, and to avoid needless repetition they may first be briefly stated.

The possibility of organic disease must always be considered and the signs that would reveal it carefully looked for in the examination; only when it has been excluded are we safe in attempting to discriminate among the functional diseases.

Hysteria being a functional disease of the cortex, the motions caused by it are always such as may voluntarily be imitated or may occur in a healthy person under strong emotion. In movements that are certainly hysterical we never see single muscles not separately under the control of the will act alone; still less do we see a part of a muscle act alone as in myoclonus. The converse, however, is not true; pathologic movements involving the whole of a group of muscles which normally act together under control of the will are not necessarily hysterical, for other functional and even organic diseases may so act on the cortex as to cause motions of the same character.

The more regularly a movement recurs in time, the greater the probability that it is hysterical. Prominence of ideas or emotions as exciting causes makes it probable, but not certain that the disease is hysteria.

Although the movements themselves seem to be characteristic of some other disease, chorea, for instance, any marked deviation from the mode of onset and course of evolution usual in that disease should suggest hysteria as a possible cause. The presence of other symptoms characteristic of hysteria adds greatly to the probability that the movements in question are hysterical, but it must never be forgotten that hysteria may be added to any other disease.

The most characteristic hysterical movement is a rhythmical oscillation affecting one part. For example, the elbow or any other joint may at regular intervals of time be alternately flexed and extended, the hand opened and closed, the head nodded to and fro or from side to side, the tongue thrust out and retracted, and so on. These motions may be slow and apparently deliberate or they may be rapid; their range may be great or small and is often irregular; it is simply the regularity in time that distinguishes them. In a typical case of this kind the diagnosis is easy, for, excepting post-hemiplegic mobile spasm and athetosis, no other disease causes such rhythmic motions. Post-hemiplegic mobile spasm is easily recognized, because the history and physical signs together indicate organic disease, and even the rare cases of athetosis not preceded by paralysis are not likely to be confounded with hysteria on account of less regularity of rhythm, the age and general condition of the patient and difference in mode of onset and course.

Hysteria, however, may cause motions in which rhythm is less conspicuous, a quick clonic spasm perhaps being combined with tonic spasm. In the neck this may simulate true, spasmodic torticollis, the bilateral form of which constitutes retrocollic spasm. The non-hysterical form of this spasm is a formidable malady which generally begins in the second half of life, only very rarely before thirty; although it is more common in females and may be aggravated by worry and grief, the history does not indicate a definite emotional cause; the onset is almost always gradual and chronic; the spasm is limited to the neck; the disease is not markedly affected by mental treatment and other signs of hysteria are generally absent. In the hysterical imitation of torticollis or retrocollic spasm the patient is commonly under thirty; the history, if complete, does indicate emotion or imitation as an exciting cause; the onset is likely to be acute; the spasm tends to spread to the muscles of the shoulder and trunk; it is markedly affected by mental changes and may occur only in paroxysms; other signs of hysteria are almost always manifest.

5. Les Tics et Leur Traitement, Paris, 1902.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-fifth Annual Session, June, 1904.

Next to the rhythmic movements those most characteristic of hysteria are certain highly co-ordinated ones, such as jumping, dancing, gestures of greeting, running about on all fours, acrobatic performances and the like. These may also be rhythmical, and as a large psychic factor is obviously essential to their production the diagnosis of hysteria is at once suggested. In some cases mania may have to be considered, especially if the acts are accompanied by shouting, singing or declamation, and such actions following an epileptic attack, although perhaps hysterical in themselves, must not be mistaken for hysteria alone. The cases of saltatoric spasm described by Bamberger and others, in which the patient makes jumping motions whenever placed on his feet, are regarded by Loewenfeld as mostly hysterical, although increase in reflex excitability has been advanced as an explanation. Any organic disease causing so great an exaggeration of the reflexes would certainly give other signs of its presence. In some of these cases of co-ordinated movements consciousness is impaired and the movement seems to be part of an hysterical convulsion. In others consciousness is fully preserved.

Chorea may be so closely imitated by hysteria as to make the diagnosis difficult; indeed, it is quite probable that the descriptions of chorea have in part been drawn from hysterical cases. Both diseases are cortical, so the motions are such as may occur voluntarily or under emotional stress, and in both the symptoms are aggravated by emotion or attention. In true chorea the motions succeed each other with no regularity as to time, as to the part of the body affected, or as to range of motion.

In hysteria the motions are more regular as to time, being the rhythmic motions already described, but affecting a larger part of the body. They are also more nearly regular in the order in which they succeed each other and in their range. Hysterical motions are also likely to have more of a staccato character as though produced by isolated faradic shocks. Beyond this I know of no rule that does not require qualification. Hysterical movements are more likely to be grouped in distinct paroxysms with intervals of complete or relative freedom from spasm, but they may be continuous and true chorea may almost disappear during rest and quiet, even in the waking hours. A gradual onset, in a child or pregnant woman, without emotion or imitation as a probable cause, with involvement of the face and tongue, with voluntary motions and speech characteristically embarrassed in the early stages and prevented in the later ones, with rheumatism or endocarditis as a complication, would, of course, be proof of the genuineness of the chorea. But an abrupt onset after an emotional disturbance is by no means proof of hysteria, since, according to Gowers, from 20 to 25 per cent. of the cases of true chorea have fright as the exciting cause, and while the onset is generally gradual, beginning some days after the fright, it may be abrupt without any interval at all, the tremor of fright passing directly into the choreic motions. Loewenfeld thinks that these cases will ultimately be separated from those of infectious origin, and this seems probable, but the line has not yet been drawn. Even the presence of unequivocal signs of hysteria, although of great importance, could not be conclusive, since hysteria confers no immunity to chorea.

Hysterical movements of a limb may occasionally simulate Jacksonian epilepsy. As both diseases are cortical the character of the movements and the order in which they spread may be the same in each, and, in the absence of unequivocal signs of organic disease on the one hand and of signs of hysteria on the other, the diagnosis may be difficult. Under the influence of Charcot, Ballet and Crespin made a careful study of the means of differentiation. According to their researches, in true Jacksonian epilepsy, if many attacks come close together, there is a notable rise of temperature, the part convulsed remains more or less paralyzed for from a few hours to a few days, and there is rapid mental deterioration. In the hysterical imitation the attacks are especially likely to be numerous and close together, but there is no rise of temperature, no paralysis and no mental deterioration. Moreover, according to Gilles de la Tourette and Cathelineau, after an hysterical attack in any form, the urine for 24 hours shows a diminution in the total solids, a diminution in the total phosphates and an increase in the proportion of earthy phosphates to alkaline phosphates, whereas after an epileptic attack the total solids are increased and the relation of earthy to alkaline phosphates is unchanged.

Two of my patients have suffered from spasmodic closure of both eyes, occurring especially when fatigued, worried or in any way agitated and often at the most inopportune time, sometimes involving danger. Both cases seemed to be hysterical, as no sign of organic disease could be found, and as the neurasthenia, which was present, could not alone account for a spasm. But as between hysteria and some other form of functional spasm I could not be certain, as unequivocal signs of hysteria were lacking.

In prognosis and treatment we must be guided mainly by the principles applicable to hysteria in general. The disease being functional and having its origin in idea and emotion, a cure is always possible, provided false ideas may be corrected and emotional serenity obtained. On the other hand, hysterical movements are generally obstinate in their persistence; hysterical chorea, for example, has a longer average duration than genuine chorea.

The patient must be encouraged to expect a cure. A straightforward physician may be at a disadvantage in not being ready to promise as much as a charlatan, but he should choose to err, if at all, on the side of cheerfulness and overconfidence, for this is a case where "he who doubteth is damned." The patient should be taught to be vigorous in carrying out his voluntary actions, but to relax the muscles when at rest, and not to attempt to hold back the objectionable motions by force, but rather to let them go on as they may while trying to divert attention to something else. When any action is harmful it ought not to be thought of at all; even resolving not to do it makes the idea of it vivid and tends to start the prearranged mechanism into action. Systematic gymnastic exercises may be made very useful, but they must not be excessive, and their oversight can not safely be entrusted to a "professor" of physical culture. Any local disease or defect causing irritation should be properly treated without magnifying its importance. Impairment in general health may require attention, and the systematic rest cure may be the best means of improving nutrition, but mental influences will always be paramount in importance. If the patient's mental processes can not be happily directed all the rest will be of no avail; if they are so directed the rest will be easy.

DISCUSSION

ON PAPERS OF DRS. SPILLER, PATRICK AND PERSHING.

DR. CHARLES K. MILLS, Philadelphia, declared that he believed Sydenham's chorea to be due to the action of some infection or toxin on a nervous system exhausted by such causes as the severe cold of a protracted winter, overwork, or a nervous strain of some kind. He said that he believes Huntingdon's chorea to be one of the so-called developmental or family affections. It usually comes on at a certain decade, at about the age of puberty or of adolescence or even before puberty. It begins insidiously, with an imperative or semi-imperative movement, which increases gradually until the whole body is involved, and eventually mental deterioration takes place. Dr. Mills thinks that in many cases of chorea there is a disseminated neuritis in certain stages, just as there may be arthritis or endocarditis. He considers that rest is one of the best methods of treatment of Sydenham's chorea, and that even in the minor cases every attention should be given to hygienic treatment. The most useful drugs are the old-time remedies like arsenic. Dr. Mills has had some success with the use of conium combined with arsenic and with both drugs combined with the rest treatment. He believes that some form of carefully regulated exercise should be used as complement to this treatment. He did not agree with Dr. Patrick that torticollis comes within the domain of the tics.

DR. B. ONUF, Sonyea, N. Y., mentioned briefly a patient who at intervals for about fifteen years had had blepharospasm and spasm of the internal recti muscles, of the pupil, and of the accommodations. She was unable to read at any distance greater than two or three inches. On ophthalmoscopic examination, the fundus would at one moment be clear and at another become dim, or would disappear almost entirely; after atropinization of the eyes the picture of the fundus became stationary and the patient showed then a fair vision for a distance. Dr. Onuf discovered that about fifteen years ago, when the disease apparently first began, she went to an oculist who prescribed some "white" glasses and that after a time the spasm disappeared. She said that she had worn dark glasses previous to that time. Dr. Onuf concluded that this spasm was due to an error of refraction, giving rise to strong efforts of accommodation in order to see better. The accommodation, on the other hand, caused convergence of the ocular axes and also contraction of the pupil. The thing that puzzled him was how the blepharospasm started. He did not know whether it was a phenomenon of its own or whether it was also due to the refractive error. On studying the case more closely he found that the blepharospasm was not always present, but that it occurred chiefly when the influx of light into the eye was increased very rapidly. For instance, when she took off her dark glasses the spasm would at once set in, while it had been entirely absent while she had them on. He therefore explained the blepharospasm on the ground that the very frequent state of contraction of the pupil, due reflexly to the accommodative spasm or spasm of fixation, made the retina hypersensitive, so that as soon as slight dilatation of the pupil took place the light was much too strong to be born and caused the lids to be closed. The assumption that this was a hysterical condition was confirmed by the fact that she had very marked anesthesia over the entire body with the exception of a small area around the abdomen and another on the inner surface of the knees. The spasm disappeared almost suddenly through some psychic agency, to reappear again, however, after a time, and the fact of its persistency through fifteen years, at longer or shorter intervals, makes it a very interesting case. That refractive errors were really present was shown by the result of examination by Dr. Arthur G. Bennett of Buffalo, who found in both eyes a myopia combined with myopic astigmatism.

DR. F. E. COULTER, Omaha, Neb., referred to the observations made by Dr. Russell in cases of chorea occurring in pregnancy, in which he reported that the cases most likely to suffer from choreiform movements are those which are pregnant illegitimately, and makes this one of his leading points. Dr. Coulter stated that he has treated several cases of tic with good results. One patient was an old gentleman of 64, the condition being of four or five years' duration. Dr. Coulter used the static spark and suggestive therapeutic measures. Beyond small doses of fluid extract of gelsemium, the patient received no other treatment.

DR. ROBERT MCGREGOR, Saginaw, Mich., stated that many of the cases that he has had have occurred from fright. One girl, aged about 10 years, had an attack dating from a night when she saw for the first time the flashing of a searchlight. Another case occurred from an experience with a runaway horse. It is difficult to deduce any conclusive idea as to why chorea should result from fright. Of course, it may be assumed that when such a case occurs there is to begin with an unstable condition of the nerve centers and that the equilibrium is easily disturbed. He has had patients also who became melancholic as a result of fright. In those cases of melancholia resulting from fright the trouble is very often ascribed to malnutrition of the nerve centers in the brain as a consequence of shock, and this explanation may be used to show why chorea results from fright. Dr. McGregor's experience with chorea has led him to believe that in the majority of cases it is due to some toxic or autotoxic influence. He has had cases where the chorea appeared to be due to some article of diet. For instance, in one case, in a girl 12 years of age, who was particularly fond of veal, he treated her for about three months before he discovered the effect veal had on her system. As soon as the veal was stopped she became well and free from the chorea and remained so for about eighteen months, when she again indulged in her liking for veal and again became choreic. This might be regarded as an idiosyncrasy, but idiosyncrasies are factors in these cases.

DR. ARTHUR S. HAMILTON, Independence, Iowa, stated that the cases of chronic chorea to which Dr. Spiller referred were observed in a service at the State Hospital for the Insane at Independence, Iowa. Dr. Hamilton has been struck with the rather large number of cases seen at the hospital and he has been inclined to think that the disease is possibly not so rare as it is generally supposed to be. In a practically continuous series of 634 deaths, the six cases with which he was working occurred, with two others which he was unable to report. It seemed to him that the name "chronic progressive chorea," as has been suggested by several, is preferable to "hereditary chorea," particularly since, so far as his observation goes, all cases of chronic chorea in the aged, except certain ones said to be associated with gross organic lesion such as cerebral hemorrhage, belong to the same class. If one accepts the term hereditary chorea, it, in a way, requires the production of a history of hereditary predisposition and this, he knows from experience, is not always easy to elicit, even when it exists, and besides, like all other hereditary diseases, this one must have a beginning somewhere and even if the most careful search of the ancestry fails to reveal anything, it can not be said that the disease will not appear in the offspring of the patient when they are sufficiently advanced in years. Nevertheless, hereditary predisposition is often a striking feature and it has been present in all of his cases except two. In one of these the disease has occurred in the children, and of the other patient he has no family history. In a patient still living, whom he has had opportunity to study, the history is rather remarkable. The chorea began with the maternal grandmother, who, with two sisters, was affected. All the female descendants of these women except two have had the disease and in each instance it is said to have come on after a pregnancy. The two women who constitute the exceptions have never been married. The maternal grandmother had two brothers and these, with all the male descendants of the three women, have always been free from the disorder. That the chorea has always been confined to the female members of the family, Dr. Hamilton thinks,

is sufficiently established, but he is inclined to doubt that in each instance it appeared after a pregnancy. It seems to him more likely that, in some of the cases at least, the pregnancy simply caused the symptoms to become worse and in that way enabled the disease to be recognized.

Of the six cases before referred to, three died with a more or less well-marked pneumonia, probably due to aspiration, as swallowing was difficult in all cases. One died of streptococcus infection. In two instances the patients became unconscious and died without apparent cause other than the progress of the disorder. In one patient, 63 years old, autopsy showed extreme atrophy of the convolutions of the brain; in another, who died at 85, the atrophy was certainly not greater than one would expect at that age. In the others, who all died at about middle life, the atrophy was fairly well marked. Reduction in the number of cortical cells was quite pronounced in some instances and intracellular changes have been quite common, though many of these are such as are seen in other conditions and, doubtless, they are frequently the result of the progress of the disorder rather than its cause. These changes are such as chromatolysis, displacement of the nucleus and pigmentation of the cell. Round-cell infiltration of the perivascular lymph spaces was present in at least one case. In one case—the patient of whom he has practically no history except that his chorea had been present for many years, and in whom the movements were much worse on one side than the other—the cells of all parts of the cord were more or less diseased but in the anterior horns the degeneration was much more marked than elsewhere and in one anterior horn almost no cells could be found. Bodies which appear a good deal like the so-called chorea bodies were quite common in this cord.

DR. S. M. CROWELL, Charlotte, N. C., emphasized the importance of suggestive therapeutics in the treatment of this condition. He said that he thinks that a working knowledge of psychology should be required of all graduates in medicine.

DR. D. J. MCCARTHY, Philadelphia, stated that he made a careful examination of one case of Sydenham's chorea, in which the microscopic examination of the brain showed very marked chromatolysis. There were no hemorrhages, but very marked congestion of the gray matter of the spinal cord and cerebral cortex. He examined three cases of Huntingdon's chorea and found in all three cases a granular degeneration of the cells of the cortex, a very marked atrophy of the cerebral cortex and changes in the cerebral tissues, practically the same thing as those found in general paralysis. In that case the patient showed delusions of grandeur, tremor, and the speech very closely resembled that of paresis. He has also had other cases of Huntingdon's chorea presenting the same symptoms. In one case he used the suggestive treatment for two or three months and the patient was able to gain sufficient self-control to be able to go back to his work, which was that of a carpenter, and worked at his trade for several months, after which he became very much worse.

An interesting case in which the cerebellum was probably involved was that of a child, the eldest in a family, and which was reputed to have weighed 20 pounds at birth. The labor was prolonged, and at the age of 16 months the child developed epilepsy. The patient was admitted to the Philadelphia Hospital with marked chorea and delusions and the diagnosis of chorea *insaniens* was made. Choreiform movements were present. Examination showed marked depression on the occiput and very marked nystagmus. The condition persisted and, if an epileptic attack would develop, the choreic symptoms would become very severe, last one or two days and then clear up. In the interval between the attacks choreiform movements would occur. A very interesting case of tic was that of a little girl who developed the habit of moving her ear voluntarily; she developed a habit spasm affecting these muscles and the ears would move up and down every two or three minutes, because of the habit chorea.

In connection with Gilles de la Tourette's disease, there is a condition due to the excessive use of tea and coffee which gives rise to distinct difficulty in reading and interferes with the use of the eyes. This condition is a condition of intoxication from the use of tea and coffee and is not a condition of chorea at all; it usually clears up with removal of the intoxication and also from rest of the eyes. It is manifested at first by an occasional fibrillary tremor, which increases until practically all of the individual fibers are in active motion—an irregular orbicular-electrical chorea. There is practically no movement of the lids, merely the constant movement of the individual muscle fibers. The patient usually complains of a feeling of tension about the eyes and the contractions become very annoying. This local phenomenon about the eyes corresponds to the electrical choreas, myoclonias, etc., and, like them, is a muscular manifestation of an underlying intoxication.

DR. JOHN PUNTON, Kansas City, Mo., emphasized the importance of suggestive therapeutics in the treatment of tic. He cited the case of a Denver saloon keeper, who was on his way to Philadelphia to be operated on for the sixth time for tic. He was intercepted by some friends and advised to consult Dr. Punton. His history was of tic of the most marked character, and the scars on his face indicated that he had been operated on. He was under the influence of morphin and was taking six grains a day; he also had a saturated solution of cocain with which he bathed his gums every few moments. The case appeared to be a very difficult one, as the paroxysms seemed to be almost continuous, and the standing of the various surgeons who had operated on the patient led Dr. Punton to decide that there was not much that he could do. The patient also said that before leaving Denver he had consulted Dr. Pershing, who advised operation. A surgeon was consulted in reference to extirpation of the gasserian ganglion, but the patient would not consent to that operation. After keeping him under observation for a week, Dr. Punton lost sight of him for about three months. The patient was then purchasing a ticket for Denver, and claimed to be cured. He said that he had been cured by a quack in Kansas City, simply by "magnetic healing." Dr. Punton said that this case showed the marked influence of suggestive therapeutics in tic. The case surprised him, and now before he advises surgery he always tries to see if he can influence such conditions by suggestive therapeutics.

DR. JOHN H. W. RHEIN, Philadelphia, reported the pathologic findings of a case of Sydenham's chorea which came under his care recently. The patient, a boy of 12, died during the second week of the second attack of the disease, the result of a sharp attack of pneumonia of two days' duration. By an examination of the specimens so far Dr. Rhein has been able to demonstrate the presence of capillary hemorrhages in the cortex, and in the muscle a few fibers were found in which there was loss of striatum and slight vacuolation of the muscle substance. Dr. Rhein stated that he has had the opportunity of studying a great many cases at the Orthopedic Hospital and Infirmary for Nervous Diseases in Philadelphia, and he believes it can be concluded that all reflexes are increased in a great many cases and diminished in a certain number, and that if there is anything characteristic at all in reflexes it is that they are capricious. He has seen a great many cases treated by arsenic and has had an opportunity to study the histories of a great many more (probably over 1,000 in all), and is forced to conclude that the development of neuritis during treatment by arsenic is very rare indeed. Choreiform movements may exist in certain rare cases of locomotor ataxia, and two years ago he reported a case of this character at the Saratoga session of the American Medical Association.

DR. WHARTON SINKLER, Philadelphia, said that he thinks that one of the reasons why there is so much diversity of opinion of the nature of chorea is that there is a tendency to include under one head many varieties of the disease, some of which have little in common except that one of the symptoms consists in movements of an irregular and spas-

modic form. It must be remembered, too, that there are many diverse causes of chorea. Some cases of Sydenham's chorea may be of infectious origin, but they are not by any means all of infectious origin. One could not for a moment believe that cases of chorea induced by fright, as many are, could be due to infection, nor can the numerous cases due to an overstrain of study or school be of infectious origin. There are also met with several types of Sydenham's chorea in which the symptoms vary to a marked extent, so it seems important that in the study of chorea and of choreiform affections one should discriminate more fully between the different forms of the disease which are met with.

DR. J. A. HODGES, Richmond, Va., emphasized the causal relation of rheumatism and chorea. Having been impressed as a student with the theory that this disease is almost inseparably connected with rheumatism as a causal factor, Dr. Hodges expected to find it in a great majority of his cases; however, during an experience of ten years he has not seen a single case of chorea associated with rheumatism. Likewise, he has only seen two cases suffering with heart lesions and only two that were supposedly due to toxins, though he is not absolutely positive about these, as neither case died and he did not have the opportunity of extending his investigations into the definite cause of the disease. Many neurasthenic conditions, he believes, may be the cause of this disease. Dr. Hodges referred to the calmative effect of iron on muscular tissues. In a number of cases in which neither small nor large doses of arsenic would control the spasmodic manifestations, iron caused marked improvement.

DR. ALBERT E. STERNE, Indianapolis, stated that a great many cases of tic of the convulsive sort have absolutely failed to be benefited by any method that he has ever employed. The older the patient is the poorer the prognosis becomes. The prognosis is very much better in children and decreases as the patients advance in age. There must be a fundamental weakness for the manifestations exhibited in chorea, because the same elements which produce chorea in these individuals have absolutely no effect on persons not predisposed to the condition through fundamental nervous weakness. He believes that there is a very distinct relationship, in a large percentage of cases, between Sydenham's chorea and acute arthritis. It is perfectly natural in a predisposed case that there be a joint manifestation which is frequently overlooked. He has seen many cases beginning in chorea which have developed heart disease only, or arthritis and endocarditis, successively. Chorea may be either the first or the last in the trinity of diseases. In the case of a child which had injured itself by cutting with a piece of tin, the wound would not heal, but remained open, and the child successively developed arthritis, endocarditis and chorea; all disappeared under treatment, but again she developed arthritis, endocarditis and chorea, and died. Dr. Sterne could not recall a single case where tuberculosis was associated with chorea.

DR. W. C. JONES, Walnut Springs, Texas, declared that in his state there is a great deal of chorea and very little rheumatism, and still less cardiac trouble.

DR. WM. G. SPILLER, Philadelphia, briefly referred to a case which at first was under the charge of Dr. Mills and which then passed under his care. The patient was operated on, the spinal accessory nerve being resected and two inches removed. The man continued to jerk his head, and a Keen operation was performed and the nerve supply of the muscles of the back of the neck and finally the nerve supply of the corresponding muscles on the other side of the neck cut also. The patient left the hospital very much improved. Dr. Spiller recently saw a patient who had convulsive movements of the muscles of the neck and of the face, who was discharged from the hospital cured after resection on each side of the spinal accessory nerve, but he stated that he failed to see how this could have cured the movements unless by suggestion. Dr. Spiller regards senile chorea as a more serious condition than Sydenham's chorea and thinks it may be difficult at times to diagnose the senile forms from Huntingdon's chorea. He thinks that at times there is a relation between Sydenham's chorea and rheumatism but that it is often much exaggerated.

DR. HUGH T. PATRICK, Chicago, confirmed Dr. Spiller's statement that implication of the muscles of the eye is very unusual in chorea. Aside from occasional choreiform rolling of the eyeballs, he had never seen marked implication of the eye muscles until recently. A few months ago he saw a boy of 5 with very severe chorea, confining him to bed, and the eyeballs were in constant, irregular, jerky motion. He had never seen anything approaching it except in a few cases of very grave organic disease, and when he first looked at the boy he supposed he had to deal with some serious lesion. The case, however, proved to be a typical one of Sydenham's chorea, and the child gradually recovered. In the treatment, he favors very large doses of arsenic. His opinion is that large doses will produce effect when smaller ones will not. He has had only one case of arsenical multiple neuritis caused by administration of the drug in large doses. That he thinks was not all his fault. He was giving arsenic at that time hypodermically in large doses, which he has since stopped. He went away on a vacation and the case, he thinks, was not watched as carefully as it should have been. He always watches the knee-jerks with extreme care, and if he sees any sign of their disappearance or weakening, he stops the drug at once, as this is a sign of beginning neuritis. It never occurred to him to treat a case of chorea by hypnotism.

DR. HOWELL T. PERSHING, Denver, stated that he believes in large doses of arsenic for chorea, but that he has long since ceased to use Fowler's solution. He now gives cacodylate of sodium in a 1 to 60 solution, which corresponds in arsenical strength to Fowler's solution. It can be given in doses up to 20 and even to 30 minims three times daily without causing any gastrointestinal disturbance. He has had no cases of arsenical neuritis since he began using it, five years ago. He stated that he has never recommended an operation in any case of that kind, though he has been present at and has consented to such operations.

THE RADICAL OPERATION FOR EMPYEMA OF THE FRONTAL SINUS.*

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The practice of rhinology some years ago was in great danger of becoming monotonous. At our conventions the papers on reflex neuroses, adenoids and deviated septa were too numerous and were discussed over and over. What a pleasant change has taken place since, and how differently we treated "nasal catarrh" in the past from what we do now! Each case of atrophic rhinitis and of ozena is a study in itself, and every disease of the accessory sinuses means good judgment and labor. But just this change has lent new interest to our work. Foremost in this respect are the affections of the frontal sinus.

In the paper which I have the honor of presenting to you, principally the chronic forms of suppurative frontal sinusitis are dealt with. In order not to be misunderstood in my conclusions, it will be wise to state from the start that by far the great majority of cases improve under intranasal treatment. And thus the patients are enabled to live for many years, now and then suffering little or more discomfort. In other patients the symptoms are somewhat more pronounced, but many would rather endure them than to undergo a serious operation.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-fifth Annual Session, June, 1904.

Before we decide on radical treatment by external operation we should exhaust all means possible to afford relief by intranasal procedures. It is an experience common to all of us that acute cases readily yield to a mild treatment, the exceptions only proving the rule. And I have nothing to add to this, excepting one case that occurred in the practice of a well-known colleague in a neighboring city.

CASE 1.—On Feb. 20, 1893, I was called to see Mrs. ——, who had been treated a week for typhoid fever. She had fever ranging between 101 and 102 F., and suffered greatly from a constant deep-seated pain over the right eye; constipation was also present. From the start she insisted on consulting a rhinologist, but the attending colleague objected on the ground that the frontal headache was due solely to the typhoid fever. Finally he was discharged, and his successor called me in. The pain was so pronounced that one could hardly touch the affected parts. The patient was unable to sit up in bed, and under the circumstances the examination was rather difficult.

Examination.—I found the spleen somewhat enlarged, no roseola and no pain over the abdomen. Anterior rhinoscopy revealed a highly congested and enlarged middle turbinal, between which and the septum, after cocainization, pus oozed out.

Treatment.—Removal of the anterior ethmoidal cells, followed by washing out of the frontal sinus, which was the seat of the acute empyema, brought great relief to the patient at once. Subsequent daily irrigations of the sinus and applications of silver nitrate removed all difficulties within five days, the patient being completely restored to health. The shortsightedness of the first attending physician is incomprehensible.

During and after an epidemic of influenza, we have all seen cases that yielded to mild treatment. I am fully convinced, however, that many a case failed to improve and puzzled the attending physician by simulating acute mania or the like. But we are not to discuss these today, and I shall now pass to the chronic forms of frontal sinusitis.

CHRONIC FRONTAL SINUSITIS.

Diagnosis.—The diagnosis of these cases is not always simple, and I wish we had some safe method by which we could always determine at the first examination whether or not an empyema of the frontal sinus exists. Of the different symptoms mentioned in textbooks, the tenderness over the sinus on slight or strong tapping or on pressure was absent in some of my most characteristic cases, while in others it was quite marked. Asthenopia was sometimes a prominent feature, and I agree with H. Manning Fish that this sign comes more in evidence when the flow of pus from the sinus is temporarily checked.

Transillumination is mentioned here only on account of the peculiar behavior in one case. This was a gentleman with distinct empyema of the right frontal sinus, who was under my observation for nearly four years. The flow of pus continued day after day for years, the middle turbinal was absent, and one could easily reach with a probe far up into the sinus, which apparently extended a good distance above the eyebrow. Irrigation of the sinus was also very easy. Now, in applying the electric lamp for the purpose of transillumination, a large, bright area could be seen on the affected side, which was in strong contrast to the healthy side, which appeared much darker—just the opposite to what was to be expected. The affected sinus was apparently much distended, and, since the flow of pus was no longer obstructed and the sinus emptied constantly, there was nothing to prevent the rays of light from penetrating the sinus walls and producing the translucency.

The most reliable evidence is afforded by probing and washing out the pus from the sinus. This is by far the safest way of reaching a diagnosis. The probing itself is difficult. Indeed, it is rarely possible to enter a sinus by passing a probe along the frontonasal duct, and I agree fully with Charles H. Knight[1] when he says that "one is quite likely to get into the anterior, or frontoethmoidal cells, or even altogether fail to find the orifice of the canal." A perfectly thorough exploration of the sinus cavity can not be made with the probe. We are handicapped in many ways by the narrowness of the field in which we have to work, by copious hemorrhages, etc. Even on the cadaver it is impossible to do this or any operation completely through the nose. The reappearance of pus in the middle meatus after syringing the antrum of Highmore signifies that its origin lies higher.

Another important point arises now, as Hajek correctly says, viz., we have to decide whether the pus comes from the frontal sinus alone, from the anterior ethmoidal cells discharging into the infundibulum, or from both. It is sometimes extremely difficult to decide this, and mistakes in this direction are not infrequently made.

CHOICE OF METHODS OF TREATMENT.

Having reached a definite conclusion regarding the condition of the frontal sinus, what are we to do? Are we to treat our patients by intranasal methods, and how long are we justified in following up that course?

It is but natural that we should attempt to establish free drainage intranasally. If we succeed in that way by simply washing out the sinus, we run no risk in continuing this treatment for some time. But in most cases we have to remove the ethmoidal cells, and herein lies the great difficulty. The ethmoidal labyrinth, as Hajek correctly points out, can be freely opened through the nose, but not totally resected. The cribriform plate is dreaded, as a perforation of it will lead us directly into the cranial cavity.

Although, in a discussion on this topic before the Section on Laryngology of the New York Academy of Medicine, several colleagues reported that they had met with this accident and the patients nevertheless recovered perfectly, still it is at least unpleasant and does not bring the patient nearer to a cure. Still, we can give a good deal of relief to the patient by intranasal methods and are justified in continuing it—of course, with the consent of the patient—until threatening symptoms set in. But do not let us forget that such an empyema is in some instances a constant menace to the patient, and that other infections may arise from it. Permit me to quote the following case, which, though no positive proof of that theory, is nevertheless very suggestive:

CASE 2.—Mr. R. N., aged 45 years, had the grippe four years ago. Directly afterward he began to suffer from "nasal catarrh" and headache. Two years later he caught a cold and became hoarse, which condition lasted for several weeks. From that time on he occasionally suffered with sore throat. He came to me on account of hoarseness, which hindered him in business.

Examination.—On my first examination a dyspnea and a constant cough, with long inspiratory stridor, was noticed; little expectoration. In the larynx I found perichondritis of both arytenoids, which was the cause of the dyspnea. Examination of lungs and sputum, negative. In both nostrils there was marked atrophy of all structures; he removed masses of scabs by daily syringing. Probing and washing out of both frontal sinuses was done immediately, and at once he told me he had less difficulty in breathing. From that time on I frequently repeated irrigation of the sinus, and then the patient

1. Knight: Diseases of the Nose and Throat, p. 94.

generally felt the same relief. But this was only a subjective sensation. Objectively, in the discharge from the frontal sinus, tubercle bacilli were detected at a time when the findings of the sputum were negative. Later on the sputum also showed tubercle bacilli, and finally physical signs of tuberculosis developed over the lungs. Although there is no direct proof of a communication between the affections of the frontal sinus and the larynx, it is only natural to associate both under the same etiology, as the possibility of a lymphogenetic infection of the latter from the sinus is very great. Therefore, I proposed to perform tracheotomy and immediately afterward do radical operation on both frontal sinuses. This seemed to me the only rational way of rendering a cure possible. The patient, however, lost two valuable months in delaying the operation and afterward disappeared.

Formerly a radical operation was considered necessary only when one of three symptoms was present, viz., brain pressure, swelling of the frontal region due to expansion of the frontal sinus, or dislocation of the eye, or all three. Since the genial Berlin surgeon, Dieffenbach, first performed that operation we have changed our views as to its indications. Nowadays, after treating the patient for several months and exhausting all kinds of intranasal treatment, it is our duty to propose an external operation under the following conditions:

1. When the purulent discharge is copious and the patient apparently loses ground.
2. When the discharge is fetid and combined with persistent headaches.
3. When the above-mentioned "classical" symptoms are present.

A combination of any of these symptoms naturally makes the indication so much more imperative.

After coming to a conclusion as to the necessity of an operation another difficulty arises, viz., which method is to be followed? Let me emphasize at once that there is no operation that will answer all purposes. Each case has to be treated individually, and each operation requires special rules.

ANOMALIES IN THE SINUSES.

The more I operate in this field, and the more sinuses I open in the cadaver, the more do I see that the variations in the size and shape of the frontal sinus are extreme. It is not very unusual to find the sinus entirely absent, or only rudimentary on one side and very large on the other. In 24 cadavers which I dissected I have found the sinus absent on one side three times. Repeatedly a cell was found between the two sinuses. In one case this cell extended quite a distance up on the left side, although there was no sinus at all. On the other side the sinus extended sharply from the median line all along the supraorbital margin.

A. Logan Turner,[2] our esteemed guest from Edinburgh, in his comparative studies found that the absence of one or both sinuses was not so very uncommon as may be thought; in other words, there was no cavity extending into the vertical portion of the frontal bone "This, however, does not exclude the possibility of the existence of a small frontal air space between the two laminæ of the orbital plate." Whether this air space is identical or similar to the above-mentioned cell which I found I can not decide, but it is probable. The difference in the size of the sinuses is sometimes very pronounced. More important, however, in case of operative intervention, is the difference in their height. In many cases the upper wall of the sinus does not even reach the supraorbital margin. This I consider of such extreme importance for Killian's operation that we always should be on our guard against any such occurrences. Mistakes can often be avoided, but certainly not always. We shall speak about this later on.

METHODS OF OPERATION.

A colleague who has done good work along this line is Arthur Hartmann[3] of Berlin. In his atlas he recommends an operation which is very much like the one we now frequently use.

One of the first to perform this operation radically and on a larger scale was Jansen. His incision along the eyebrow to the supraorbital notch is well known. The bony wall is opened just above the internal angular process of the frontal bone. At this point the bone is thinner than on the anterior surface and can be easily perforated. Then he removes the lower wall of the sinus, and in large cavities the edge of the anterior wall, and closes the external wound. There is no doubt that with this method the ethmoidal cells can easily be reached, but the exploration of the frontal sinus is not so easily accomplished.

In this respect the method of Riedel, who removes the anterior and orbital wall, offers greater advantages, but most authors agree that the cosmetic effect is a bad one. I omit here the description of the well-known methods of Ogston-Luc and Kuhnt, since they have been discussed frequently. Kuhnt's method is surely one of the best, but lesions of the infundibular cells of the labyrinth are not accessible. This is a great drawback, as the fontal sinus affections are almost invariably combined with diseases of the ethmoidal cells. According to Hajek's and my experience, the nasofrontal duct is so intimately connected with some of the ethmoidal cells that, in all probability, we can expect an affection of the latter when the frontal sinus is diseased.

Killian's Operation.—Killian of Freiburg, in order to reach all diseased parts, establish perfect drainage and make the cosmetic effect perfect, modified the former methods in vogue and claims excellent results for his own. As his procedure does not seem well known on this side of the Atlantic, you will permit me to give you a short résumé of it:

Killian's method is as follows: 1. Start incision at the temporal end of the eyebrow, cutting directly through the latter to its median end; extend the incision in a graceful curve around to the side of the nose, and cut through the middle of the nasal process of the superior maxilla.

2. Incision of the periosteum about 5 to 6 mm. above the supraorbital margin and parallel to it, followed by a second incision through the periosteum exactly in the center of the frontal process. His idea is to remove the anterior and the lower wall of the sinus with the preservation of a bony bridge, believing that this gives an excellent cosmetic appearance after the operation. In the line of the first periosteal incision he outlines the upper border of the osseous bridge he intends to preserve by light taps with the chisel.

3. Opening of the frontal sinus, either above or below the bridge and probing.

4. With chisel and hammer a furrow is made along the first periosteal incision, and principally with bone forceps the entire anterior wall is removed, followed, of course, by curetting of all diseased mucous membrane.

5. The supraorbital margin is next outlined from the floor of the sinus, and the whole floor resected, thus leaving a part of the bone about 5 to 6 mm. wide.

2. A. Logan Turner: The Accessory Sinuses of the Nose, Edinburgh, 1901.

3. Atlas der Anatomie der Stirnhöhle, Wiesbaden, 1900.

6. Resection of the frontal process of the superior maxilla and the rest of the floor of the sinus.

7. Resection of the anterior and middle ethmoidal cells and the respective parts of the middle turbinal.

8. Formation of a flap from the rest of the nasal mucosa, so that there remains a permanent and large opening into the sinus.

There is no doubt but that this operation is the most radical one, and that it apparently offers the best advantages for a permanent cure. But even this method will have to be modified to suit every variety of cases, if such a thing will ever be possible. For the present, I am not ready to recommend it for all cases; and, indeed, opinions differ widely as to the removal of the various parts.

While Riedel advocates the resection of the entire anterior and lower wall and Killian the same with the retention of a small bridge, Jaques leaves the vertical part of the bony wall intact, but removes the orbital part totally. Burchardt,[4] a former assistant of B. Fränkel's, says: "It is contrary to general experience that cavities do not heal without partial removal of the orbital vault." I confess openly that so far as my experience goes, we can not as yet lay down such general rules.

In one case the whole anterior wall was affected and had to be removed *in toto*. On the other hand, in a case which had been operated on nine months previously by a general surgeon, all the symptoms had returned. On opening the sinus I found the lower wall intact but necrotic, and on removing it there was seen near the outer angle of the orbit a small pocket which was almost entirely partitioned off from the rest of the sinus. I have observed similar formations on the cadaver. It must be admitted that I could not have seen this pocket without following Killian's technic, and it is evident that in this case a cure could never have been effected without removing the lower wall.

Siebenmann of Basel praises Killian's operation as an advance in unilateral affections, but claims that his cosmetic results in double sinusitis were not good where the sinuses were very deep anteroposteriorly. We shall have to await his further communications before being able to judge of his proposed modifications.

Before opening the frontal cavity we are very often misled as to its dimensions. Even when we succeed in probing the sinus, we are mostly not able to judge of its height. We may believe that the sinus reaches upward above the eyebrow, and in trying to operate after Killian and open the sinus in this manner, we may get into the cranial cavity. Such a case has occurred in my own practice, and according to private information in that of others as well. It may be briefly mentioned here as an illustration and a warning to others:

CASE 3.—Miss ——, aged 45, born in England, consulted me on account of a constant purulent discharge from the nose and severe headaches.

Examination.—Both middle turbinated bodies had been removed, and it was easy to probe both frontal sinuses, as well as to wash them out. The flow of pus was very great. I recommended a double radical operation. As this had been proposed already by another colleague, she consented readily, being happy to be freed of her troubles.

Operation.—In the presence of several colleagues, I tried to follow Killian's method exactly. After marking the bony bridge, part of the bone above it was chiseled away, when to our surprise the dura mater presented itself.

4. Arch. für Laryngologie, vol. xv, p. 496.

The patient made a rapid recovery and left the hospital, the wound being entirely closed. I have not seen her since.

Now, what had happened here? We either had probed an ethmoidal cell, or there was some communication with the sinus of the other side, which was the sole cavity discharging the pus. Or we were misled in judging the distance which the probe had entered. I am inclined to believe the first mentioned.

The variations in the size of the sinus are so great that we should enter it only at the safest point, and that is not above the eyebrow. The most extreme variations I have found in my autopsies on 24 cadavers I shall report here. The first one was in a male cadaver, apparently of Indian type. Here the left sinus that did not reach beyond the middle line was very much larger than the other. Its greatest height near the septum amounted to one inch, while on the other side it did not reach the supraorbital margin and was hardly half an inch in height. The second specimen (Fig. 1) is a characteristic type of another variety. The right sinus in this specimen is quite small, similar to the former case, while above it is a large cavity that belongs to the left sinus. You will observe I commenced Killian's operation on that sinus; the bridge has been prepared and

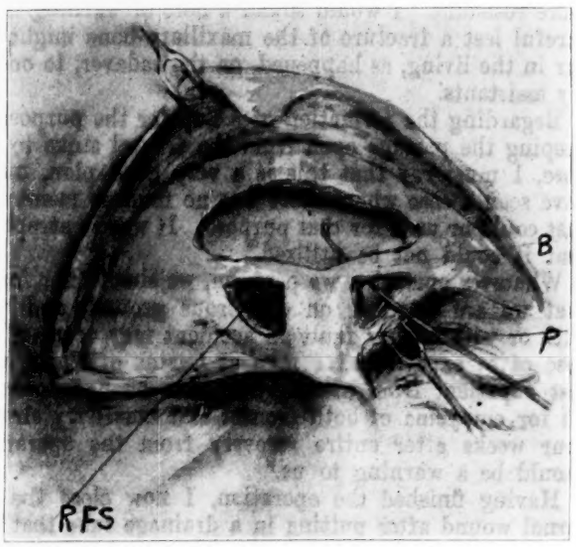

Fig. 1.—B, bridge between the two parts of left frontal sinus; P, probe in left sinus; RFS, right frontal sinus.

a probe is inserted from the smaller lower section of the sinus into the large upper one, which extends further toward the external canthus of the right eye than of the left.

Now, if we should have made an opening on the right side above the bridge, we would, in the first case, have entered the cranial cavity, and in the second we would have opened the sinus of the other side, neither of which was desired. At any rate, the above experience has taught me a lesson, viz., never to open the sinus first above the eyebrow. I always start the opening now near the upper inner canthus. Then I can probe the sinus readily and measure its dimensions. This is the only safe way to proceed. My experience on the cadaver has taught me the same, and I would advocate it here emphatically.

After opening the sinus as mentioned, I can easily probe my way and then prepare the bridge from above, if that be feasible. If the sinus ends upward at the

eyebrow, we must naturally be satisfied to remove only the lower wall and then there can be no bridge. But when the sinus is large enough I believe in preserving a bony bridge, thus improving greatly the cosmetic effect. It must be mentioned, however, that in some exceptional cases the bone is so affected that it is not advisable to leave any behind. In spite of this, the cosmetic effect is sometimes good, as in one case of mine in which the entire anterior wall had been removed and in which no perceptible depression was left. In another case of mine the bridge broke off during chiseling, but here, too, the result was so good that you can hardly say which side was the affected one. Still, we should not rely on such fortunate occurrences, and be on the safe side by leaving a bridge. The main thing in all these cases is to preserve the periosteum and let Nature do the rest.

If during the operation the horizontal incision alone does not give enough space, I do not hesitate for a moment to make another vertical incision after Kuhnt. This is, in men especially, of no importance, and makes the operation easier.

Regarding the removal of the frontal process of the maxillary bone, it is usually easier on the living than on the cadaver, where the bone is healthy and much more resistant. I would sound a note of warning to be careful lest a fracture of the maxillary bone might occur in the living, as happened, on the cadaver, to one of my assistants.

Regarding the formation of a flap for the purpose of keeping the passage open from the frontal sinus to the nose, I must say that this is a very good plan, but I have seen a case where there was no mucous membrane that could be used for that purpose. It was so atrophied that it could not be utilized.

Whatever operation we perform, we should not forget that we are treading on dangerous ground, and that with or without our fault an accident may occur. The case of so experienced a man as Castex of Paris, who lost a patient from meningitis whom he had operated on for empyema of both frontal and maxillary sinuses four weeks after entire recovery from the operation, should be a warning to us.[5]

Having finished the operation, I now close the external wound after putting in a drainage tube that can be removed at will. The primary healing of the wound is preferable, as healing by granulations often, or perhaps always, causes a depressed cicatrix, which is more or less conspicuous. The more we leave the external wound alone, the better will be the appearance afterward. And again, the more we plug the cavity from the outside and the longer we try to keep it open, the more marked will be the disfigurement.

Since the reactive secretion is practically *nil,* no tamponade of the cavity is necessary, and the wound generally heals *per primam.* Sometimes a slight retention of serous fluid causes a rise in temperature. This happened in the case of a young Greek. On the fourth day after the operation he felt pain on touching the wound near the inner canthus. His temperature had varied between 98.6 and 100, when on the fourth day it rose to 104.6. The inner canthus was a little more swollen than on the previous day. On opening it simply with a probe, washing it out with a saline solution and keeping the wound open for a few days. the patient quickly recovered. This place, i. e., the region of the inner canthus, seems to be a favored one for the retention of secretions, as abscesses will develop here also. These abscesses are sometimes of no importance, but usually a spontaneous reopening of the wound will follow with the formation of a fistula. Such a fistula will seldom close, no matter what we try. It means, as a rule, a new operation, and indicates that the first one was faulty in some way. I imagine we all have had such cases, and the wider our experience grows the less frequently will they be encountered. I am convinced that Killian's method is a step further in the direction toward an ideal operation, but it is surely not ideal yet.

And now, permit me to report the histories of some of the most significant of my cases, and I beg your indulgence for narrating first a case on which external operation had not been performed. It may be illustrative of a series of similar cases.

CASE 1.—Mr. J. K., aged 60, native of Austria, came to me on account of throat trouble on Nov. 2, 1899. On questioning him, he told me that for the last three years he had had a tickling in his throat, which had grown worse during the last month. He expectorated profusely and his appetite was failing. He had been operated on for nasal polypi about two years before.

Examination.—I found a postnasal catarrh and numerous polypi in both nostrils. The treatment was carried out accordingly, but the patient steadily grew worse. He had lost 25 pounds in weight, had no appetite at all, and slept very poorly.

Treatment.—As pus continued to flow in large quantities, the middle turbinal was removed, and then granulations from the anterior and middle ethmoidal cells curetted. I did this in the beginning quite often and also curetted the lateral cells with a curved ring-knife. The tissues were so friable and the adjacent orbital wall so thin that I always dreaded perforation of the latter. Afterward I was also able to scrape out granulations from the frontal sinus. Only after that was accomplished symptoms commenced to improve. The tissues broke down like paper, but there was no sign of any luetic infection. Although the patient was, and still is, suffering occasionally from dizziness, bad taste in the mouth and consequently loss of appetite, he has refused any radical operation up to the present time. When these symptoms show up I curette the nose and free him of all the accessible pus; then he goes to the country and feels better for some time, until the symptoms reappear. I have had him under observation for five years, and he feels grateful for the relief obtained thus far.

CASE 2.—Mr. E. A., aged 39, a musician, called on me first Feb. 4, 1898. He complained of a cold in his head which had lasted for several years. Fifteen years ago, while in South Africa, he had contracted lues, had afterward married, and his wife had given birth to a healthy child.

Examination.—His nose was clogged with a mass of foul-smelling scabs and crusts, after the removal of which a large perforation of the septum with ulcerations on its border could be seen. The left lower turbinal was atrophied, and on the anterior portion of the middle turbinal bare bone could be felt.

Treatment.—This was scraped away, and gradually the whole turbinated body removed. The antrum was washed out repeatedly, and always quite a mass of pus and débris brought away. But pus continued to flow from further up. After curetting away a mass of broken-down tissue I could finally pass a probe into the frontal sinus (June 14, 1898). There was no doubt that an empyema was also present here. It need hardly be mentioned that antisyphilitic treatment had been initiated the first time the patient had called.

The man led a rather irregular life, and disappeared for three months. On Sept. 18, 1898, he returned to me and said he had been playing in a country hotel and had used the potassium iodid sol. 100 drops t. i. d., but had given up the inunctions for obvious reasons. An edema had appeared over the left eye, and the patient felt some pain in that region. Other-

5. Intern. Centralbl. f. Lar., p. 166, 1904.

wise he considered himself perfectly healthy. I must confess I was not very anxious to do a radical operation in this case, as I was doubtful about the outcome, and I tried my best to bring this process to a standstill by intranasal methods and by pushing the antiluetic treatment to its limit. It seemed as if we were to be successful. But our friend then absented himself again, and returned only when the pus had made an opening through the forehead. Without general narcosis, I enlarged this opening and found an exceptionally big cavity. It reached above the eyebrow surely one inch and extended outward as far as the orbit. There were several sequestra, which were removed, and all the affected parts touched with nitrate of silver in substance. Drainage into the nose was then established and the wound dressed without suture. I am glad to say it healed very nicely within about three weeks and that the scars on the forehead are not very conspicuous now.

CASE 3.—Mr. C. M., aged 40, a wholesale merchant, consulted me, with quite acute symptoms. He told me he had been unable to breath well through his nose for the last three or four years. Whether there was pus present during all that time he did not know. Three months ago nasal polypi had been removed in several sittings by a colleague. After the last séance he had "dreadful" headaches. But later it seemed as if something had broken, and an abscess opened, and he then felt easier. About ten days ago this pain returned. It was so severe that he could not sleep at all. For the last two days he felt, on the contrary, like sleeping all the time, although the pain had not left him. He was somewhat dizzy, so that his wife had to lead him into my office, his mind did not seem to be perfectly clear, and he answered questions put to him rather slowly and hesitatingly. Temperature, 101 F. No appetite.

Examination.—On examination I found the parts over the right frontal sinus swollen, and the right eye somewhat closed. Great tenderness to touch at supraorbital margin. Transillumination showed shadow on the right side. In the nose there were several polypi and a mass of pus. Considering the seriousness of the symptoms, I advised an immediate radical operation, but the patient preferred to wait. This gave me an opportunity to remove the polypi. I was not able, however, to probe or syringe the frontal sinus, as the slightest touch further up above the middle meatus caused a fainting spell. Nevertheless, the diagnosis was beyond doubt. He was growing weaker, felt like vomiting, etc., when, after eight days, his family consented to an operation.

Operation.—Oct. 4, 1902, 7 a. m. Radical operation after Kuhnt. Eyebrows shaved, horizontal and vertical incision. Periosteum drawn upward and downward; sinus opened above the eyebrow. The cavity, which was filled with pus and granulations, was not very large. The entire anterior wall was affected, and consequently removed, and the rest of the cavity thoroughly scraped out. Drainage into the nose; Myle's tube inserted and sinus packed with gauze. Patient made an uneventful recovery and left the hospital on October 17. The wound was kept open for two weeks longer, when it was allowed to close, which it did within a few days.

Result.—Although the entire anterior wall was taken away, there is hardly any visible difference between the two sides, with the exception of a small retraction where the wound had been drained. I have seen more marked retractions in other cases, and find it best now to close up the external wound immediately following the operation.

One of the most interesting cases I have seen is the following:

CASE 4.—Mr. O. W., aged 59, in the wholesale business, has a most peculiar anamnesis. He had been suffering for the last ten to fifteen years from headache on the left side. It used to "creep up and all over," and then was most severe under and behind the left eye.

History.—His digestion has always been poor, and grew worse two years ago after he had an attack of sunstroke. He became very nervous and sometimes felt like jumping out of the window. His family physician, a well-known and able colleague, took him to different nerve specialists of this city, who are recognized authorities. He went through different cures without experiencing the least relief. Finally he was advised to get away from business and take a trip to Europe. He went to Giessen, in Germany, to visit relatives, to whom he told his different ailments. He snuffled constantly at that time, and somebody advised him to consult a rhinologist. Dr. Reinewald of Giessen saw him and found pus in the middle meatus. He resected the anterior portion of the middle turbinated body and the anterior bulla cells, and advised him to see me after his return to New York. For business reasons he had to remain for a while in Germany, and consulted another specialist, Dr. Warnecke, in Hanover. The latter found an empyema of the left antrum, which he opened with Krause's trocar from the lower meatus. He treated him for a week and again advised him to call on me immediately after his return to New York.

He consulted me first on Dec. 11, 1903, and on being questioned told me that he had had pain in the nose for years and also "catarrh."

Examination.—The opening made by Dr. Warnecke had closed and pus in the antrum was again found. The next day the antrum was opened from the alveolar process, whereupon a great deal of pus was washed out. This, however, according to Mr. W., was not so putrid as that discharged after the first incision by Dr. Warnecke. The daily irrigations of the antrum met with some difficulties, the patient being a potator and of a very nervous temperament, which grew steadily worse. In spite of the irrigations, and every time after them, pus was noticed in the middle meatus. The cause of the disease, therefore, had to be looked for higher up. The removal of granulations and some ethmoidal cells could not be accomplished thoroughly, as the patient objected to it without general narcosis, but probing of the frontal sinus could be done after thorough cocainization. In transillumination the left sinus appeared darker than the other.

Operation.—The diagnosis of chronic frontal sinusitis was made and radical operation proposed. This was performed on Jan. 24, 1904. Both eyebrows were shaved and a horizontal incision made, reaching to the external margin of the eye. Then the periosteum was incised and pushed upward and downward. Very near the middle line, right above the eyebrow, the bony wall was opened with chisel and hammer. The whole anterior wall was found to be affected and removed *in toto*, mostly with bone forceps. The mucous membrane could be lifted up in pieces. The whole sinus was curetted and cleansed with hot sterile water. Then every part of it could be examined thoroughly. As the entrance to the nasal cavity was easily enlarged with a ring knife, and apparently every diseased particle removed, I saw no reason for performing here Killian's operation, but inserted a Myles drainage tube and packed the external wound with iodoform gauze.

I have to mention again that the patient was an alcoholic, and consequently the free use of wine and whisky was permitted.

Hospital Record.—During the day he was greatly distressed with gas, but relieved by enema. Further on during his convalescence a rectal tube always made him feel easier. Temperature in the evening, 99 degrees; pulse, 60.

January 26, 8 a. m., pulse, 68; temperature, 99 degrees; 9 p. m., pulse, 66; temperature, 100 degrees. Passed the day comfortably, but felt somewhat dizzy.

January 27, highest temperature, 99.6 degrees.

January 28, wound dressed, after which he was very nervous for several hours, but comfortable later on.

January 29, 8 a. m., pulse, 60; temperature, 98.2 degrees. Complains of "cloudiness of vision." 7 p. m., pulse, 64; temperature, 99.6 degrees. Is slightly delirious; alcohol rub and plenty of whisky. During the following night nurse remarked, "Very vivid imagination."

January 30, wound dressed and looks healthy. No double vision. Patient rests easily.

January 31, complains of a disagreeable smell. Temperature

normal. Patient gets out of bed for an hour. After that his recovery was uneventful. Granulations had to be removed on and off from the cavity, which closed up slowly.

Patient never noticed a smell again and felt like a new being. His residence being out of town, I kept him in the hospital until February 9. The external wound was almost closed and water injected into the rest of the cavity ran out through the nose.

Later History.—There is still some discharge from the nose, but the patient feels perfectly comfortable. Goes south for a few weeks and returns with the wound closed and feels well. The region of the frontal sinus feels to the touch like hard newly-formed bony tissue, and the only thing that shows a sign of the operation is a slight depression above the eyebrow.

The remarkable features in this case were the obscure symptoms during all the years of his sufferings, which did not lead any of his physicians to examine his nose. I believe the neurologist especially ought to learn the one lesson from this case, that in every instance of persistent headache not only the eyes, ears, etc., have to be examined, but also the nose. It is, perhaps, not amiss to believe that many a patient who died under "obscure brain" symptoms might have been saved by looking into the accessory sinuses.

Postscriptum.—May 30. Patient has always felt well and still feels well, but noticed a slight purulent discharge through the former wound. The probe enters not quite one-quarter of an inch and there is a little pus in the middle meatus. Whether we shall have to reopen and do another operation can not be said for the present.

CASE 5.—In this instance I did for the first time a typical Killian operation. The history is as follows:

History.—C. L., a young Greek, 20 years of age, was sent to me by Dr. A. Rose. His complaints mainly consisted in not being able to breathe through the nose. Besides, he expectorated occasionally thick pieces of phlegm from the back of his nose.

Examination.—On examination he presented the typical picture of ozena, both sides of the nose being clogged with the characteristic dried-in scabs, these also being present in the pharynx. He had noticed the bad odor himself, but did not like to talk about it.

Treatment.—After cleansing the parts it was seen that only the right side was affected, and the diagnosis of empyema of the right maxillary sinus and most likely of other sinuses as well was made. Consequently the antrum was opened through the alveolar process and a mass of putrid discharge was evacuated. Shortly, however, the water came out quite clear, but more pus was seen in the middle meatus and in the retropharynx. The next step was the cutting away of the anterior ethmoidal cells and some polypoid granulations, after which I could syringe the frontal sinus. With the probe I could also go up a good distance into the frontal sinus, apparently above the eyebrow. The odor still being present, and to a marked degree, and seeing no other way of getting rid of it, I proposed to make a Killian operation.

Operation.—April 14, at 7:30 a. m., we began the operation, after giving him morphin, ¼ gr. hypodermically, and putting atropin into the eye. Both eyebrows were shaved, as the hair afterward grows more symmetrically and it looks better. Horizontal incision, curving around the inner canthus to the nose, preservation of the periosteum, outlining the osseous bridge, and chiseling an opening through the anterior wall above it. The cavity was filled with granulations and cheesy masses, the curetting of all of which caused quite a profuse hemorrhage. Then the lower wall was opened and cut away, mostly with bone forceps. Although we did it carefully, part of the bridge broke off. But we left that as it was, only smoothing off the edges a little. After cleaning the whole lower part of the sinus, we removed the frontal process of the superior maxillary bone and curetted the ethmoidal cells. This stage of the operation took the longest time, as the bleeding in this strong young man was at this point more profuse than before. After stopping the flow of blood I could get into the sphenoidal sinus without difficulty and scrape it out. Finally the outer wound was closed by sutures, no packing put into the cavity and only a Myles rubber tube left to establish drainage between the frontal sinus and the nose. The operation lasted two hours, which was longer than usual. This can only be accounted for by the severe bleeding. During the day the patient complained of a great deal of pain in the stomach, which was somewhat relieved after vomiting a good deal of blood. Did not pass urine and had to be catheterized repeatedly. The temperature during the next three days ranged between 99 and 100.4 and the pulse was accordingly.

Hospital Record.—April 17, 7 a. m., dressing changed for the first time. No reaction at the wound; slight edema of upper eyelid. No double vision. Stitches taken out and no more atropin used. Patient feels comfortable. Highest temperature, 99 degrees.

April 18, 8 a. m., temperature, 98.6 degrees; pulse, 70; 6 p. m., temperature, 101; pulse, 96. Complains of headache, but slept well.

April 19, 7 a. m., temperature, 99.6 degrees; pulse, 78. Dressing changed; wound looks well; tenderness and slight swelling near inner canthus; 3 p. m., temperature, 104.6; pulse, 110. Dressings changed; tenderness more marked. As there was no other symptom to account for the sudden rise in temperature, the possibility of retention of pus or serum was brought to my mind. With the end of a probe the wound was opened and a few drops of a serous fluid escaped. The saline solution was injected and came out through the nose quite clear. Wound kept open. Patient slept restlessly and awoke at 3:30 a. m. in profuse perspiration.

April 20. During the night the temperature had gone down gradually so that at 8 a. m. it was 98.8; pulse, 80; 4 p. m., temperature, 100.2; pulse, 80.

April 21 and 22, temperature normal.

April 23, pain in right eye; edema of eyelid gone; acute conjunctivitis, which brought up the temperature to 101 degrees and once to 102 degrees. Instillations of sulphate of zinc removed the conjunctivitis entirely by April 26.

It must be mentioned here that the patient had been suffering for years from an eczema over the whole body. This appeared on the forehead and it seemed that in rubbing his eye he brought some of the eczematous secretion into the conjunctival sac, thus producing conjunctivitis.

From April 26, normal temperature. Patient discharged from sanatorium on April 27. April 29, rubber tube taken out and wound allowed to heal. There remained a small fistula for two weeks. After touching the borders with pure nitrate of silver this closed too.

Result.—The final result so far is excellent. Externally there is no disfigurement and only a very small scar visible. The discharge from the nose has not stopped entirely, but the patient feels no discomfort whatsoever. The remarkable features in this case were, firstly, that no disfigurement took place, although a part of the bridge had broken off. The periosteum, of course, had been kept intact and the newly formed tissue seems now as strong as that of the other side. Secondly, the sudden rise of temperature to 104.6 degrees F. on the fourth day was somewhat startling. There was nothing to account for it, excepting the retention of a small quantity of serous exudation. This is an unusual occurrence in our cases, but of no account, since the fever generally subsides after letting out the fluid, just as it did in our case.

I want to remark that this was not a case of ozena, as I understand it, and as described by me at the Madrid Congress, but one of frontal and maxillary sinusitis with a bad odor.

CASE 6.—Miss B. S., aged 28, actress, had had influenza three years ago, after which a "catarrh" set in. A year later the right maxillary sinus had been opened by a dentist. There is now a great deal of purulent discharge from the nose, as well as a bad odor, that annoys her greatly. She also suffers very much from headache.

Examination.—On examination I found polypi in the nose

and much pus. After removing the polypi the diagnosis of empyema of the antrum was made and radical operation proposed.

Operation.—This was performed on September 5, under general anesthesia. The bleeding was quite profuse and could only be stopped by pressure on the facial artery. This did away with the necessity of having to plug the antrum and wait for a day or two to complete the operation. The entire mucous membrane had to be removed, as it was necrotic. She experienced much relief after the operation, but pus continued to flow. About six weeks later I removed the middle turbinal and also some small polypi and found the frontal sinus to be also affected. Bare bone could be felt and the tissues broke down easily on touching them with the ring knife. After trying this intranasal curetting for weeks and the headache still being very persistent, the radical operation was proposed and accepted.

Second Operation.—Dec. 6, 1903, at 2:30 p. m. She had received morphin, gr. 1/6, hypodermically and atropin into the eye. Both eyebrows had been shaved previously. The horizontal incision was made and the bridge outlined after Killian's method. As I had decided to enter the sinus first always below the bridge, I did so here. I must say I am not sorry for it, as the sinus just reached as far upward as the supraorbital margin. I would have gotten into the cranial cavity had I tried to chisel first from above the bridge. The operation was performed in the same way as in Case 5, but, of course, there was no bridge preserved. The whole sinus, which was small, was scraped out, the nose entered and a drainage tube inserted. The septum interfrontale was intact. Wound closed entirely by sutures and dressed. By 3:45 p. m. the operation was over, i. e., after one hour and a quarter.

Hospital Record.—At midnight the temperature was 100.6 degrees; pulse, 108. She was catheterized and vomited three times during the night. No sleep.

December 7, 8 a. m., temperature, 100.6; pulse, 108; voided 5 ounces of urine; 8 p. m., temperature, 99; pulse, 100; morph. sulph., ¼. At midnight catheterized (6 ounces). Slept very little.

December 8, temperature 99 degrees (mouth); pulse, 94; 4 p. m., temperature 98.4 degrees; pulse, 94; voided urine; vomited at 5.

December 9, temperature 99 degrees (mouth); pulse, 94; wound dressed; no reaction. After that the healing of the wound was uneventful, there being no fever and no unpleasant symptoms.

Result.—On December 24 she left the hospital. I saw her at my office and I discharged her entirely cured six weeks later. There is now, a year later, so little to be seen externally that it is noticeable only on close inspection. There is no more discharge of pus. Indeed, this case healed in an ideal way.

In a further case I performed the typical Killian operation with preservation of the bridge, etc., but I shall await the result before publishing it in detail.

CONCLUSIONS.

In formulating conclusions, I would say:

1. Regarding the conservative treatment of these cases, the remarks made by A. Kuttner[6] of Berlin are much to the point. Everyone of us ought to try to live up to this conservatism as much as feasible.

2. In those cases in which we have to operate, Killian's method seems at present to give the best results.

3. The first opening into the frontal sinus must always be made below the outlined bridge, and only after exploring the sinus should another above it be made.

4. In the latter case we leave a bony bridge which helps toward improving the cosmetic effect.

5. Closing of the external wound immediately after the operation is by far preferable for such cosmetic effect.

1003 Madison Avenue.

6. Berliner klin. Woch., p. 370, 1904.

DISCUSSION

ON PAPERS OF DRS. FREUDENTHAL AND TURNER.*

DR. GEORGE L. RICHARDS, Fall River, Mass.—I have had considerable experience with what is known as the Ogston-Luc operation and I published the results of a number of cases three or four years ago. Later experience has led me to the conclusion reached by Dr. Turner, that obliteration of the sinus must be brought about. One case which went along without symptoms for three years became reinfected and another operation was necessary. This time the sinus was obliterated. The question of the character of the operation can not be decided in advance of the time when the patient is on the table. As a rule, the question of deformity is not likely to be considered. But I have noticed that although the patient says beforehand that it makes no difference as regards the deformity, he is likely to wonder if it could not have been done with less deformity. Paraffin might be used to advantage, but has not been tried long enough yet to determine.

As to the statistics of the Ogston-Luc operation, if these cases could be analyzed, would it not be found that in the cured cases the ethmoidal cells were not affected? A certain amount of time must be allowed to elapse before one can tell whether the case is cured or not. I have gone over Killian's thirteen published cases.[1] Case 1 was six months under treatment, and he says that when discharged there was only a little pus in the nose. I do not think that can be called a cure. He makes the statement that there is no deformity except when you look closely. Case 2 was sixteen days under treatment. Case 3 was treated for two months, with some resultant deformity, but evidently not enough to prevent marriage. He says the deformity was due to the use of too strong carbolic acid. One point as to the degree of deformity should be remembered—what we would consider great deformity would be considered slight in Germany. Case 4 had been a year under treatment and still had double vision and double abscess. Case 5 was a double frontal, under treatment for one month, with pus still present in the nose. We must consider that in these early cases he may not have obliterated all the cells of the nose. Case 6 was treated for fourteen days, with good cosmetic effect. Case 7 was treated sixteen days, and the right frontal region was deeper than the left. Case 8 had recurrence and he found at the second operation that a small fistula leading into the other sinus had been overlooked at the first, showing that great care must be exercised, since it is so easy to make such mistakes. After nearly two years he operated on the other sinus and effected a cure after about a month and a half. Case 9 had double vision and was treated for five months. Case 10 was treated twelve days. Case 11 was treated three months and two days and had temporary double vision. Case 12, treated for two months and eleven days, was not yet healed. So I question whether any sinus trouble can be reported as absolutely healed until sufficient time has elapsed to be sure that recurrence will not take place.

The last word has not yet been spoken on the subject, nor the best method of operation absolutely determined. If we would publish a careful record of all our cases, noting the method of operation and when the case healed, then our statistics would be worth something. The first thing to do is to get an opening under the supraorbital plate at the inner angle of the eyes and explore the sinus; if it is small, then obliterate it; if large, go up and down and do a complete Killian operation and take off the nasal process. When Killian works he stands behind the patient in order to obviate injury to the superior oblique and to get the relation of the cells better.

DR. R. C. MYLES, New York City—For the last fifteen years I have been working along this line, but I have not yet made a report of my cases, except individual ones. Cases should not be counted as cures unless we are sure there is no pus in the cells

*The paper of Dr. Turner appeared in THE JOURNAL, February 4.

1. Archives f. Laryngologie, vol. xiii, No.

from one to four years afterward. I have done nearly all the operations except the complete Killian, and my most brilliant results have been accomplished through an operation I have not heard mentioned to-day. That is the thorough removal of the anterior ethmoidal cells and part of the floor of the frontal sinus through the nose. I can show cases with the most obstinate history which have recovered and are well to-day. Killian speaks of his operation as a radical one. I do not see how it can be called that, when a large cavity is left which often contains pus. I have had difficulties with the eye in removing the floor far back beyond the optic nerve. We are liable to have abscess form which may destroy the sight. I think the secret of our success in many cases depends not so much on the amount of scraping and packing, as on securing a good, large opening from the nose into the frontal sinus. The anatomy is more favorable for this and where the ethmoidal cells are large and other conditions are favorable, if the parts can be broken down easily and the ethmoidal cells all removed, we will get our most satisfactory and brilliant results, whether we do the operation beneath the brow or above it. We may be able to educate people to consent to an operation, leaving such deformity as we have seen, and this I am trying to do, injecting some of the cases with paraffin.

As to the difficulty of diagnosis spoken of by Dr. Freudenthal, I have had but little difficulty in getting a small tube in. I wrote a paper on this point along in 1890 and have been doing this work almost daily. One can not do this in a healthy sinus, but usually it can be done in a diseased sinus, and that is where it is desirable. When water is injected and returns full of pus, the diagnosis is differentiated and then one can measure how far up the instrument goes. The morning pain, which goes away in the afternoon, is due to the frontal sinus being half full of pus. Gas forms, and when this gas forces the thickened muco-pus out and escapes itself the pain disappears. I have never had a death under treatment, though one man died who refused operation for a long time and afterward consented. After three or four days he suddenly became unconscious and died.

DR. E. E. FOSTER, New Bedford, Mass.—Last fall and winter I saw twelve radical operations on the frontal sinus, done by Professor Killian and his assistant, Doscent van Eiken. The results were excellent. There was one death of an old woman who was practically moribund at the time of the operation. Dr. Freudenthal mentioned the fact that Professor Killian does not shave the eyebrow; Professor Killian's reasons for not doing so are that he has had a few cases where the hair did not return, leaving a very objectionable appearance and cases where the hair grew so long that it was also objectionable. He cleans the brow with soap, alcohol and corrosive sublimate. I did not see an infection of the wound from the hair. He is very careful to remove all cut-off hairs from the skin incision before he continues the incision through the periosteum. An important point regarding the cosmetic results is to make several short superficial cuts at right angles to the long incision, thus enabling the operator, at the end of the operation, to accurately appose the much stretched edges of the incision. Diplopia occurred in several cases, but it was of only short duration. Professor Killian uses a long, narrow strip of iodoform gauze for drainage. He doubles the strip, placing the double end in the temporal side of the frontal cavity; the cavity is loosely packed; the two ends are pushed through the opening made in the floor of the frontal sinus. One end is used for packing in the nose, while the other end is brought out through the nasal orifice. A V-shaped chisel is used in making the supraorbital bridge and the boundaries of the opening through the nasal process of the maxillary bone. It has been stated that a large depression remains after the operation. I did not see any objectionable depressions in Killian's cases. In those cases where the depression is noticeable paraffin is used with excellent results. Post nasal tampons are not used, but the meati on the side to be operated on are packed with long rolls of cotton. The tampon in the middle meatus is removed when the flap is made. The flap is the mucous membrane from the nasal surface of the frontal process of the maxillary bone. The external wound is closed with aluminum wire sutures, except when there has been a fistula or the tissues over the bone have been involved in the inflammatory process, then the wound is only partly closed with a drain. The cases referred to by Dr. Richards were the cases first reported by Killian. Since then he has improved his operation in several important points, and, of course, developed greater skill. The Killian radical operation is not an operation to be attempted by the average operator.

DR. EMIL MAYER, New York City—Does Dr. Turner follow the method of Jansen in using the electrotrephine? Jansen is very fond of using this in his frontal sinus and mastoid work, and it seemed to me the stress laid on avoiding raw surfaces of bone was important.

DR. G. E. SEAMAN, Milwaukee, Wis.—My colleague, Dr. Hitz, and myself have been doing work on these cases during the last year, and we had several cases which seemed to be favorable for the Killian operation. We first did the operation on the cadaver a number of times, and were very careful to avoid wounding the pulley of the superior oblique muscle, and succeeded in most instances. In one case operated on, where the frontal sinus was very large, the resulting deformity was considerable at first; this has improved. In that case there was disturbance of motility of the eyes which persisted for some time, but at the end of three months it had passed away. In discussing these cases with Dr. Sifton of Milwaukee he told me that he had operated on a frontal sinus case several years ago and had found the hemorrhage very troublesome. He put a temporary ligature on the common carotid. Does Dr. Turner consider this a recognized procedure? Is it ever necessary or justifiable in his experience?

DR. C. R. HOLMES, Cincinnati—I fail to see how obliteration of the cavity can be done in a large per cent. of cases. In the last ten or twelve years I have dissected a great many heads, and I have had a large number of specimens where the frontal sinus extends back over the orbit and some where it extended back almost to the optic foramen. In such cases I do not see how a radical operation can ever be successfully performed if we have any regard at all for appearance. I think the disfigurement is a very important factor, especially in young women. Even some men are not willing to take the chances of a radical operation if thereby they are to be disfigured for life. The oculist finds evil results from this condition on the eye. I have seen quite a number of cases of diplopia result and while after a time this becomes less, it is because there is a readjustment of the muscle. This, however, means a constant strain on the eyes for the rest of life, due to the effort of both eyes to work together. These people often suffer greatly with headache and exhaustion.

DR. KASPAR PISCHEL, San Francisco—Allow me to put on record a case of optic neuritis and paralytic divergent strabismus caused by a suppurative frontal sinus. In spite of an early successful operation atrophy of the optic nerve followed. In order to inform ourselves, before the operation, of the size of the frontal sinus I would suggest taking a skiagram. That will assist in the selection of the method of operation. In Killian's operation the "sinu-nasal" canal might be covered with skin grafts to keep it well open. To prevent a depression of the skin above the eyebrow, part of the sinus might be filled with paraffin covered with absorbable Cargile membrane. The bone flap shown on the screen by Dr. Turner seems to give an ideal cosmetic result. The sinus might then be lined by skin grafts as we cover the bone trough in radical mastoid operations.

DR. F. C. ARD, Plainfield, N. J.—During the past winter I have assisted Dr. Coakley in a number of operations on the frontal sinus, and his method of operating has not been mentioned in this discussion. He removes the anterior wall, without disturbing the floor of the sinus, and curettes the walls of the cavity with great care, under illumination, and then packs with iodoform gauze. He aims to obliterate the nasofrontal duct, and to allow the cavity to fill up by granulation. Sufficient time has not elapsed in these cases to make sure there will be no recurrences, but there is apparent recovery in

all that I have examined, as is evidenced by the fact that the wounds have healed, and there is no pus in the nasal cavities. A case that I operated on early in March by this method has just healed, but it was a very large sinus.

DR. W. FREUDENTHAL—Dr. Turner has brought up the osteoplastic operations, though he has not done any himself. In some cases I find it impossible to do this because of the broken-down tissue which must be removed. I remember one case where I removed the whole anterior wall, and a new wall formed. I have not seen a case of diplopia. I use atropin before the operation. But these cases of diplopia go more to the ophthalmologist than to us. I must admit that Dr. Myles has had a larger experience than I and he is able to do more with these cases than most of us. In many cases I could not reach the frontal sinus, and it is often impossible to measure the distance. Dr. Turner himself mentions having attempted to enter the right sinus and got into the left one instead. Dr. Foster's point was well taken. The disfigurement in my cases was very slight, probably due to the periosteum being preserved. The last word has not yet been spoken on these operations and we shall have to learn a great deal more. Yet if we can save a few of those cases like the one mentioned in my paper, who was contemplating suicide, we have done a great deal.

DR. A. LOGAN TURNER—Much more was omitted from the paper that might have been said. We are not yet at the bottom of this question; there is still much to learn, but some day we shall be in better position to deal with these cases. I have not been educated to Dr. Myles' view that we can treat these cases through the nose. As regards treatment by drainage through the nose, I know that there are cases in which satisfactory results have been obtained, but if we consider the anatomic configuration of the sinus, I do not see how we are to expect a cure by this method. There were many points of detail which I did not give fully for lack of time. One point about which I wanted information was in regard to the formation of a flap of mucous membrane described by Killian. Others as well as myself have had difficulty in understanding this point. With regard to the osteoplastic operation, I introduced this procedure from Hajek's new edition. There seems to be something in the Killian method of operating which is approaching more nearly to the result desired, giving excellent curative results with the minimum of disfigurement. I have had no experience with the use of the electric trephine. We can obtain good, smooth edges by the careful use of the chisel. I have always found hemorrhage to be well controlled with peroxid of hydrogen. This stops it very rapidly, just as it does in mastoid work. I do not know whether the common carotid has ever been ligated in these cases or not.

Dr. Holmes said he felt difficulty in seeing how the sinus could be obliterated. I have had no difficulty whatever in doing this, either on the living person or on the cadaver. It is astonishing to see how readily the soft tissues of the orbit rise up while you are removing the floor of the sinus and obliterate the orbital portion of the cavity. It is wise to remove all of the bony floor and not to leave any bone at the apex of the orbit. Further, what Dr. Holmes said about the future of these cases is important. I shall take occasion to find out whether my old cases have developed any eye strain. I did not refer to the method spoken of by Dr. Ard, viz., preservation of the osseous floor. Dr. Coakley probably obliterates the orbital part of the sinus by gradually filling it up with granulations.

Prophylaxis in Surgery.—It has always been my idea, wrote Dr. L. Sexton of New Orleans, that if surgeons would spend more time in getting the patient in proper condition to stand the operation, in having everything in readiness, in having assistants trained in what they are expected to do, and also if the least possible time were consumed in performing the operation, and if all lectures and explanations were suspended until the operation is finished, much less of the first necessary poison, viz., the anesthetic, would be required, and we would have fewer cases *in extremis* to deal with after operations.

PRESENT STATUS OF ANTITUBERCULOSIS WORK IN THE UNITED STATES.

SUGGESTIONS FOR A MORE EFFECTUAL CO-OPERATION OF AUTHORITIES, PHILANTHROPISTS, PHYSICIANS AND LAYMEN.*

S. A. KNOPF, M.D.

NEW YORK CITY.

The kind interest with which my first report in 1897 and my second report in 1902 on the tuberculosis problem in the United States was received by the members of the Section on Hygiene and Sanitary Science and of the American profession at large encourages me again to give a bird's-eye view of what is being done in our country in the combat of the great white plague. Between my first and second reports five years had intervened; between my second and third only two years have elapsed. My reasons for reporting after this shorter interval are to be found in the unusual activity of sanitary authorities of the medical profession at large, and of the philanthropic societies and individuals engaged in antituberculosis work. Far greater progress has been made during the last two years than in the preceding five or ten.

There are now no less than forty-eight American and five Canadian associations for the prevention of tuberculosis, working under the names of societies, committees or commissions. The following is as complete a list as I have been able to collect myself up to this date[1] and to Miss Lillian Brandt, the very efficient statistician of our tuberculosis committee in the New York Charity Organization Society, I am indebted for such statistical material as was at her disposal.

SOCIETIES AND COMMITTEES FOR THE PREVENTION OF TUBERCULOSIS, AND STATE COMMISSIONS.

CALIFORNIA.

Southern California Antituberculosis League—F. M. Pottenger, M.D., president, 226 Bradbury Bldg., Los Angeles, Cal.

Tuberculosis Committee of the Medical Society of the State of California—Dr. F. M. Pottenger, secretary, 226 Bradbury Bldg., Los Angeles, Cal.

COLORADO.

Evangelican Lutheran Sanitarium Association of Denver, Colo.—Frederick d'Amour, president; Dr. Henry G. Merz, secretary, 632 17th St., Denver.

Jewish Consumptives Relief Society.—Dr. C. D. Spivak, secretary, 1421 Court Place, Denver, Colo.

CONNECTICUT.

New Haven County Antituberculosis Association—Dr. Francis Bacon, president, New Haven, Conn.

DISTRICT OF COLUMBIA.

Committee on the Prevention of Consumption of the Associated Charities—Dr. Wm. C. Woodward, chairman, 811 G St., N. W., Washington, D. C.

GEORGIA.

Georgia Medical Commission to Investigate the Extent of Tuberculosis in Georgia, and Means of Stamping Out the Disease.—Dr. Charles Hicks, chairman, Dublin, Ga.

ILLINOIS.

Committee on the Prevention of Tuberculosis of the Visiting Nurses' Association.—Dr. Alice Hamilton, 79 Dearborn St., Chicago.

Illinois State Association for the Prevention of Tuberculosis.—Dr. Edmund J. James, president; Dr. Arnold C. Klebs, secretary, Chicago.

Committee on Tuberculosis of the Illinois State Medical Society.—Dr. J. W. Pettit, chairman, Ottawa, Ill.

National Antituberculosis Association, Incorporated in Springfield, Ill.—Incorporators: Dr. W. B. Metcalf, Rev. F. M. Carson, C. O. Hanford, Alderman Butterworth, W. R. McDonough, all of Chicago.

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*The discussion on the papers of Drs. Knopf and Price, in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-fifth Annual Session, June, 1904, will appear in a later issue with the paper of Dr. Price.

1. Owing to the large number of papers read at Atlantic City it was impossible to have this report appear before. During the six months since the paper was read a number of new societies have been formed and several new institutions established. Through the courtesy of the editor of THE JOURNAL, the manuscript was returned to me in order that I might bring the statistical portion as nearly as possible up to date (January, 1905).

INDIANA.

Indiana Committee of Tuberculosis of the State Medical Society.—Dr. J. N. Hurty, secretary, Indianapolis.

The Antituberculosis Society of Indiana.—Dr. Theodore Potter, secretary, Indianapolis, Ind.

MAINE.

The Maine State Sanatorium Association.—Portland, Me.

MARYLAND.

Maryland State Commission.—Dr. Marshall Langton Price, medical officer, 10 South St., Baltimore.

The State Association for the Prevention and Relief of Tuberculosis in Maryland.—Dr. H. B. Jacobs, president; Dr. Joseph S. Ames, secretary.

MASSACHUSETTS.

The Boston Association for the Relief and Control of Tuberculosis.—A. M. Wilson, secretary, 6 Beacon St., Boston.

Tuberculosis Aid and Education Association.—Miss Edna A. Woolson, secretary, 277 Howard St., Cambridge, Mass.

The Springfield Association for the Prevention of Tuberculosis.—Dr. H. C. Emerson, president, Springfield, Mass.

Worcester Association for the Relief and Control of Tuberculosis.—Earle Brown, secretary, Worcester, Mass.

American Invalid Aid Society.—Mrs. E. W. Waite, secretary, 73 Tremont St., Boston.

MINNESOTA.

Society for the Prevention of Tuberculosis.—Dr. H. M. Bracken, Pioneer Press Bldg., St. Paul, Minn.

Minnesota State Commission (in regard to Sanatoria).—Dr. H. L. Taylor, Chairman, 75 Lowry Arcade, St. Paul, Minn.

The Antituberculosis Committee of the Associated Charities of Minneapolis.—Edwin D. Solenberger, secretary, 738 Boston block, Minneapolis, Minn.

MISSOURI.

St. Louis Society for the Prevention of Tuberculosis.—Mr. F. E. Eaton, president; Mr. G. A. Blickhahn, secretary; Dr. Wm. Porter, chairman, St. Louis.

NEW HAMPSHIRE.

New Hampshire State Commission (in regard to a sanatorium).—Dr. Irvin A. Watson, chairman, Concord, N. H.

New Hampshire Society for the Prevention of Consumption.—Dr. O. B. Douglas, chairman, Concord N. H.

Suncook Association for the Prevention of Tuberculosis.—Suncook, N. H.

NEW JERSEY.

New Jersey State Commission (in regard to Sanatorium).—Edwin A. Stevens, treasurer, 1 Newark St., Hoboken, N. J.

Antituberculosis Committee of the Oranges.—Miss Louisa R. Pierson, secretary, Orange, N. J.

NEW YORK.

Binghamton Society for the Prevention and Cure of Tuberculosis.—Charles W. Fetherolf, secretary, 9 Linden Ave., Binghamton, N. Y.

Tuberculosis Committee of the Buffalo Charity Organization Society.—Dr. P. W. Van Peyma, chairman; Frederik Almy, secretary, 165 Swan St., Buffalo, N. Y.

Committee on the Prevention of Tuberculosis of the New York Charity Organization Society.—Paul Kennaday, secretary, 105 E. 22d St., New York City.

Tuberculosis Committee of the United Hebrew Charities.—Dr. Lee K. Frankel, secretary, 365 Second Ave., New York City.

Committee on the Prevention of Consumption of the United Garment Workers of America.—Henry White, chairman, Bible House, New York City.

Tuberculosis Committee of the Rochester Public Health Association.—Dr. M. E. Leary, 32 South Washington St., Rochester, N. Y.

OHIO.

Ohio Society for the Prevention of Tuberculosis.—Dr. C. O. Probst, secretary, State Board of Health, Columbus, Ohio.

Ohio Commission, appointed by the Governor to investigate the desirability of a State Sanatorium.—Dr. C. O. Probst, secretary, Columbus, Ohio.

PENNSYLVANIA.

Pennsylvania Society for the Prevention of Tuberculosis.—Dr. Lewis Brinton, secretary, 1423 Spruce St., Philadelphia.

The White League.—Mr. Edwin W. Perot, secretary, 1515 Arch St., Philadelphia.

Scranton Society for the Prevention and Cure of Consumption.—Dr. J. M. Wainwright, secretary and treasurer, 627 Linden St., Scranton, Pa.

Henry Phipps Institute.—Dr. Lawrence F. Flick, president, 238 Pine St., Philadelphia.

RHODE ISLAND.

Newport Association for the Relief, Control and Prevention of Tuberculosis.—President, Mr. Robert Frame (president Newport Board of Health); secretary, Mr. Clarence C. Moore, Newport, R. I.

VERMONT.

Vermont Society for the Study and Prevention of Tuberculosis.—Dr. H. E. Lewis, secretary, Burlington, Vt.

Vermont State Tuberculosis Commission.—Dr. H. E. Lewis, secretary, Burlington, Vt.

WISCONSIN.

Wisconsin State Commission for the Prevention of Tuberculosis.—Dr. Gustav Schmitt, 1206 Walnut St., Milwaukee, Wis.

NATIONAL.

National Association for the Study and Prevention of Tuberculosis.—Dr. E. L. Trudeau, president; Dr. Wm. Osler, first vice-president; Dr. Hermann M. Biggs, second vice-president; Dr. H. Barton Jacobs, honorary secretary; Prof. Livingston Farrand executive secretary; Dr. George M. Sternberg, surgeon-general, treasurer. The board of directors is composed of 20 men from all over the states who are particularly interested in the study and prevention of tuberculosis. The following is the present composition of the board: California, Dr. Norman Bridge; Colorado, Dr. S. E. Solly; Connecticut, Dr. John C. P. Foster; Washington, D. C., Dr. George M. Sternberg; Illinois, Drs. Arnold C. Klebs and Robert H. Babcock; Indiana, Dr. J. N. Hurty; Maryland, Drs. Wm. H. Welch, William Osler, H. B. Jacobs and John S. Fulton; Minnesota, Dr. Henry B. Bracken; Missouri, Dr. William Porter; Massachusetts, Drs. Edward O. Otis and Vincent Y. Bowditch; New Jersey, Mr. Frederick L. Hoffman; New York, Drs. Hermann M. Biggs, S. A. Knopf, Edward L. Trudeau and Mr. Edward T. Devine; North Carolina, Dr. Charles L. Minor; Ohio, Dr. Charles O. Probst; Pennsylvania, Drs. Lawrence F. Flick, Mazyk P. Ravenel, H. S. Anders and Leonard Pearson; Texas, Dr. N. M. Smith and Dr. George E. Bushnell of the United States Army Hospital, and Surgeon-General Walter Wyman of the United States Marine Hospital; Dr. H. Barton Jacobs, secretary, 11 Mt. Vernon Place, Baltimore.

CANADA.

The Canadian Association for the Prevention of Consumption and Other Forms of Tuberculosis.—Rev. M. Moore, D.D., secretary, 128 Wellington St., Ottawa, Canada.

Ontario Anticonsumption League.—Rev. C. S. Eby, D.D., secretary, Toronto, Canada.

Montreal League for the Prevention of Tuberculosis.—Dr. A. J. Richer, honorary secretary, 11 Bleury St., Montreal, Quebec.

The St. Francis District League for the Prevention of Tuberculosis.—Dr. E. J. Williams, honorary secretary, Sherbrooke, Quebec, Canada.

The New Brunswick Association for the Prevention and Cure of Consumption.—Dr. William Bayard, St. John, N. B.

BRITISH COLUMBIA.

The British Columbia Society for the Prevention of Tuberculosis.—Dr. J. C. Fagan, secretary, Victoria, B. C.

Before proceeding with the statistical information, permit me first to say a word or two on the work and mission of such organizations. They are, as a rule, composed of medical men and of laymen. Many do educational work alone, others incorporate in their work the establishment of sanatoria; still others make this their exclusive purpose; others again make it their main object to take care of the patients at their homes; but nearly all these associations study the social aspect of tuberculosis in its various forms which are inevitably connected with work of that kind.

A little over two years ago, when I thought the time ripe to form an association or committee of that kind in New York, I laid down the following objects and aims for such an association in a call which was issued at the time, and which finally resulted in the formation of the New York Charity Organization Society's Committee for the Prevention of Tuberculosis:

1. The promulgation of the doctrine that tuberculosis is a communicable, preventable and curable disease.

2. The dissemination of knowledge concerning the means and methods to be adopted for the prevention of tuberculosis.

3. The advancement of movements to provide special hospitals, sanatoria and dispensary facilities for consumptive adults and scrofulous and tuberculous children among the poor.

4. The initiation and encouragement of measures which tend to prevent the development of scrofula and of other forms of tuberculous diseases.

To this call were attached the signatures of Prof. Hermann M. Biggs, Prof. Joseph D. Bryant, Dr. John H. Huddleston, Prof. A. Jacobi, Prof. Walter B. James, Prof. Edward G. Janeway, Prof. Alexander Lambert, Prof. Henry B. Loomis, Prof. T. Mitchell Prudden, Prof. Andrew H. Smith, Prof. Stephen Smith, and my own. Owing to the difficulty of finding a layman with the proper qualification for president of the society, the medical men who had signed the appeal, joined with the New York Charity Organization Society, to form a special committee, of which Mr. Charles F. Cox became president, and Mr. Edward T. Devine, secretary *pro tem.* A number of other prominent physicians, philanthropists and trained charity workers joined the committee, and it has now its regular paid secretary and its paid statistician.

Concerning the work it has done during the few years of existence, permit me to quote the following items

from the handbook issued by the committee: During the winter of 1902-1903, 91 lectures were delivered under the auspices of the committee in the various settlements, Young Men's Christian Associations, Young Men's Hebrew Associations, churches, public schools, etc. Most of these were in English, but a number of them were delivered in German, Bohemian, Italian, French and Hebrew (Yiddish). During the same period this committee has distributed 77,000 printed lectures and leaflets of instruction. One of the most important circulars of all I consider the one issued in regard to the frequently advertised "absolute consumption cures." I consider this so important that you will permit me to reproduce it here in the hope that other organizations may copy it and thus protect many unfortunate people.

WHEREAS, It has come to the knowledge of the Committee on Tuberculosis of the Charity Organization Society that many so-called specific medicines and special methods of cure for tuberculosis have been and are being exploited and widely advertised; and

WHEREAS, The advertisements of some of these cures have made such reference to the Tuberculosis Committee of the Charity Organization Society, or to some of its members, as to create the inference that this committee, or its members, recommend or advocate the use of many such so-called specifics or special methods of cure for pulmonary tuberculosis, or consumption; and

WHEREAS, There is no specific medicine for this disease known, and the so-called cures and specifics and special methods of treatment widely advertised in the daily papers are, in the opinion of the committee, without special value, and do not at all justify the extravagant claims made for them, and serve chiefly to enrich the promoters at the expense of the poor and frequently ignorant and credulous consumptives; therefore be it

Resolved, That a public announcement be made that it is the unanimous opinion of the members of this committee that there exists no specific medicine for the treatment of pulmonary tuberculosis, and that no cure can be expected from any kind of medicine or method except the regularly accepted treatment, which relies mainly upon pure air and nourishing food.

Add to this the nearly 50,000 circulars distributed by the medical inspectors of the board of health, and an idea may be obtained of the really enormous educational work done in New York. Of the other work done by the tuberculosis committee, we must note its protest to the governor against the signing of the Goodsell-Bedell bill, the protest against dwarfing the present tenement-house laws, the urging of the destruction of the celebrated "lung block," and the constant urging of the establishment of sanatoria for the consumptive poor of New York.

Besides this work, the sub-committee on treatment of our larger committee has during the first year of its existence taken care of 211 families having tuberculous members. The handbook above mentioned will give those who desire to learn more of the New York Tuberculosis Committee and what it has done much additional information. All I hope to have shown in this present meager report is what a tuberculosis committee can do when it has the support of the medical profession, the philanthropist and the municipal authorities.

I must not leave the subject of tuberculosis organizations without referring to one which has just been formed[2] under the name of "The National Association for the Study and Prevention of Tuberculosis." As those who have followed this movement will know, this association is the outcome of the earnest desire on the part of many American physicians interested to have a representative American Association for the study and the prevention of tuberculosis. The movement started with a conference called together at the occasion of the Tuberculosis Exposition in Baltimore and the subsequent appointment of committees and the framing of constitutions and by-laws. The objects of the association are (*a*) the study of tuberculosis in all its forms and relations; (*b*) the spreading of knowledge about the causes, treatment and prevention of tuberculosis; (*c*) the encouragement of the prevention and scientific treatment of tuberculosis.

I know that I express the sentiment of this Section, which has always been so deeply interested in the tuberculosis subject, in wishing this new organization God speed and a useful and glorious career. The calling into life of this national society is, to my mind, one of the most important events in the history of American medicine.

The next most important point concerning the present status of the antituberculosis work in the United States would be a list of sanatoria, special hospitals and homes devoted to the exclusive treatment of patients suffering from tuberculous diseases. I append herewith a list of such institutions existing at the present time in the United States and Canada:

LIST OF SANATORIA, SPECIAL HOSPITALS AND CAMPS FOR THE TREATMENT OF PULMONARY TUBERCULOSIS.

ARIZONA.

Mercy Hospital, at Phoenix, Ariz.; 20 beds.
St. Mary's Hospital and Sanatorium of the Sisters of St. Joseph, at Tucson; 30 beds.
"Palm Lodge" Sanatorium and Tent Colony for Incipient Tuberculosis, at Phoenix, Ariz.; Dr. Henry M. Stone, res. phys.; 55 beds; private.

CALIFORNIA.

Dr. J. W. Barlow's Sanatorium, at Los Angeles; 15 beds.
Esperanza Sanatorium, the Sierra Home of the Open-air Cure for Pulmonary Diseases, at Altadena, Cal.; Dr. F. C. Melton, res. phys.; private; 50 beds.
Ranch of Mr. N. O. Nelson, at Indio, Cal.; private.
Pottenger Sanatorium for Diseases of the Lungs and Throat, at Monrovia, Cal., Dr. F. M. Pottenger, med. dir.; 50 beds; private.
Trinity Settlement, at Redlands, Cal.; private; Dr. Moseley, med. dir.
Ballard Pulmonary Sanatorium at Pasadena, Cal.; Dr. W. H. Ballard, phys.-in-chief; 25 beds; private.
The Mentone Sanatorium, near Redlands, Cal.; A. R. Schultz, manager; Dr. Fred J. Koepke, res. phys.; 50 beds.
Tents for Tuberculous Patients of the Mendocino State Hospital for Insane, at Talmage, Cal.; Dr. E. W. Wing, supt.

COLORADO.

Glockner Sanatorium, at Colorado Springs; conducted by the Sisters of Charity; medical staff; 80 beds; private.
The Nordrach Ranch, at Colorado Springs; Dr. J. E. White, med. dir.; 50 beds; private.
Emma Booth Tucker Memorial Sanitarium for Consumptives; Salvation Army Tent Colony, at Amity, Prowers Co., Colo.; Dr. Greenard, res. phys.; 100 beds; charitable.
National Jewish Hospital for Consumptives, at Denver; Dr. Moses Collins, supt.; 90 beds; philanthropic.
Y. M. C. A. Health Farm, at Denver; semi-philanthropic; Dr. John Wethered, res. phys.; 45 beds.
Agnes Memorial Sanatorium, at Denver; Dr. G. W. Holden, sec.; 150 beds; semi-philanthropic.
Home for Consumptives, at Denver; Rev. Frederick W. Oakes, supt.; 150 beds; semi-philanthropic.
Resthaven (Home for Consumptives), Park Hill Addition, Denver; Dr. I. S. Garthwaite, president; 50 beds; semi-philanthropic.
Colorado Sanatorium, at Boulder, Colo.; Dr. H. F. Rand, med. supt.; 200 beds; private.
"Foxhall," A Private Home for Pulmonary Invalids; Dr. Wm. N. Beggs, med. dir., 133 West Colfax Ave., Denver; private.
Colorado Tent Colony Sanatorium, at Bennett, Colo.; Dr. W. K. Robinson, phys.-in-chief; 100 beds; private.
Mrs. Lare's Private Sanatorium for Consumptives, 4633 Bert St., Denver; private.
Rocky Mountain Industrial Sanatorium, at Wellington Lake, Denver; Dr. A. M. Holmes, med. dir.; semi-philanthropic.
Ballard Sanatorium, at Pueblo; Mrs. L. B. Wright, matron; 40 beds.
"Tented City," Under Auspices of the Jewish Consumptives' Relief Society, near Denver; philanthropic; Dr. C. D. Spivak, sec.; 12 beds.

CONNECTICUT.

Gaylord Farm Sanatorium, at Wallingford; Dr. David R. Lyman, med. supt.; 40 beds; semi-philanthropic.
New Canaan Pulmonary Sanatorium, at New Canaan; Dr. M. J. Brooks, phys. in charge; 30 beds; private.
Separate Wards for Tuberculous Prisoners, at Westerfield, Conn.

2. At the time of the Fifty-fifth Annual Meeting of the American Medical Association, at Atlantic City, N. J., June, 1904.

DISTRICT OF COLUMBIA.

State Hospital for Consumptives, at Hartford; public.

Tuberculosis Division of Government Hospital for the Insane, at Washington, D. C.; Dr. Wm. A. White, supt.; 70 beds.

Washington Asylum Hospital, Tent Wards for Consumptives; Dr. D. Percy Hickling, phys.; Washington, D. C.; 34 beds.

DELAWARE.

Division for Tuberculous Patients at State Hospital for the Insane; Dr. Wm. H. Hancker, supt., Farnhurst, Del.; public.

FLORIDA.

Naval Hospital; Tuberculosis Camp, at Pensacola, Fla.; 50 beds.

HAWAII.

Honolulu Home for Incurables; Dr. A. H. Sinclair, med. supt.; 24 beds; semi-philanthropic.

ILLINOIS.

The Alexian Brothers' Hospital—Consumptives' Ward, Chicago; semi-philanthropic.

St. Anne's Sanatorium for Consumptives, 49th and Thomas Sts., Chicago; Dr. A. F. Kramps, phys.; Sister Superior, supt.; 125 beds; private; and 15 free beds.

Cook County Hospital for Consumptives, at Dunning, Ill.; Dr. M. S. McHugh; public; 560 beds.

Illinois Camp for the Tuberculous, near Ottawa, Ill.; under the Auspices of the Illinois State Med. Soc.; Dr. James W. Pettit, phys. in charge; semi-philanthropic; 40 beds.

INDIANA.

St. Rochus Hospital for Consumptives, West End Main St., Fort Wayne, Ind.

Flower Mission Pavilion, City Hospital, Indianapolis; philanthropic; Dr. P. F. Martin, supt.; 26 beds.

Special Wards for Tuberculous Prisoners at the State Reformatory at Indianapolis; Dr. H. C. Sharp, phys. in charge.

IOWA.

Boulder Lodge Sanatorium for Tuberculosis, at Fort Dodge; Dr. John W. Kime, phys.-in-chief; 20 beds; private.

KENTUCKY.

Separate Wards for Tuberculous Prisoners at the Prison Hospital, at Frankfort, Ky.; 20 beds.

LOUISIANA.

Dr. G. R. Tolson's Private Sanatorium, at Covington, La.; private.

Separate Pavilion for Tuberculous Patients of the State Insane Asylum, at Jackson, La.; Dr. Geo. A. B. Hays, supt.; 32 beds.

MAINE.

The Maine Sanatorium, at Greenwood Mountain, near Hebron, Me.; Dr. Estes Nichols, med. [illegible] beds; semi-philanthropic.

MARYLAND.

Eudowood Sanatorium, Hospital for Consumptives of Maryland, near Towson, Md.; Dr. Harry P. Jarrett, res. phys.; 31 beds; philanthropic.

Bay View Asylum Hospital, Baltimore; Dr. W. H. Smith, phys.; Rev. L. F. Zinkham, supt.; 250 beds; public.

Tents for Tuberculous Patients of the Springfield State Hospital for the Insane, at Sykesville, Md.; Dr. J. C. Clark, supt.

MASSACHUSETTS.

Almshouse Hospital, at Boston; public; Dr. S. F. Cox, res. phys.; 60 beds.

Channing Home, 30 McLean St., Boston; Mrs. C. P. Fennel, supt.; 17 beds; philanthropic.

House of the Good Samaritan, 6 McLean St., Boston; Miss F. A. Jack, supt.; 27 beds.

Sharon Sanatorium, at Sharon, Mass.; Dr. V. Y. Bowditch, phys.-in-chief; 21 beds; semi-philanthropic.

Cullis Home for Consumptives, Blue Hill Ave., Dorchester, Mass.; Rev. E. D. Mallory, supt.; 40 beds.

Free Home for Consumptives, 428 Quincy St., Dorchester, Mass.; Jeanette Campbell, supt.; 30 beds; philanthropic.

The Millet Sanatorium, at East Bridgewater, Mass.; Dr. C. S. Millet, phys.-in-chief; 20 beds; private.

Massachusetts State Sanatorium, at Rutland, Mass.; Dr. Walter J. Marclay, supt.; public; 250 beds.

Boston Children's Hospital, Tuberculosis division at Wellesley Hills; 12 beds (including surgical cases).

Private Sanatorium of Dr. David P. Butler, at Rutland, Mass.

State Hospital, at Tewkesbury, Mass.; Dr. John H. Nichols, supt.; 100 beds; public.

Holy Ghost Hospital for Incurables, at Cambridge, Mass.; Sister A. M. Purcell, supt.; 35 beds; private.

MICHIGAN.

Wayne County Hospital, at Eloise, Mich.; tents for 30 tuberculous patients; public; Dr. R. H. Earle, res. phys.

MINNESOTA.

Luther Hospital, at St. Paul, Minn.; Dr. H. G. Steeb, manager; 100 beds.

State Sanatorium for Consumptives, at Walker, Cass Co., Minn.

Special Wards for Tuberculous Prisoners, at the State Prison at Stillwater, Minn.

MISSISSIPPI.

Special Hospital for the Tuberculous Insane, at Jackson, Miss.; Dr. T. J. Mitchell, supt.; 40 beds.

MISSOURI.

Mount St. Rose Throat and Chest Hospital, 9200 S. Broadway, St. Louis; conducted by Sisters of St. Mary; Dr. Wm. Porter, phys.; 100 beds; philanthropic.

Emergency City Hospital, No. 2, St. Louis; Dr. J. Y. Brown, res. phys.; 34 beds.

NEBRASKA.

Green Gables, Lincoln, Neb.; Dr. Benjamin F. Bailey, 53d and South Sts.; 35 beds.

NEW HAMPSHIRE.

Pembroke Sanatorium for Consumptives, at Concord, N. H.; Dr. H. T. Fontaine, phys.; 35 beds; private.

White Mountain Tuberculosis Sanatorium, at North Conway, N. H.; Dr. S. Dryden Snow, phys.; Clifton J. Bailey, supt.; 50 beds; philanthropic.

NEW JERSEY.

Memorial Hospital, at Orange, N. J.; Mary I. Chambers, supt.; special building for tuberculous patients; 18 beds.

State Sanatorium, at Glen Gardner, Hunterdon Co., N. J.

NEW MEXICO.

St. Joseph's Sanitarium, at Albuquerque; conducted by Sisters of Charity; 100 beds; private.

Chico Springs Sanatorium; Dr. H. B. Masten, med. supt.; 25 beds; private.

St. Antony's Sanatorium, at East Las Vegas; conducted by Sisters of Charity; 32 beds; semi-philanthropic.

"The Montezuma," at Las Vegas Hot Springs, N. Mex.; Dr. J. W. Coon, res. phys.; 200 beds.

St. Vincent's Sanatorium, at Santa Fe; conducted by Sisters of Charity; 28 rooms; semi philanthropic; Dr. J. Massie, res. phys.

Sun Mount Tent City ("for lung troubles only"), at Santa Fe; Dr. W. M. Popplewell, phys.-in-chief; private.

St. Joseph Sanatorium, at Silver City; Dr. E. S. Bullock, med. dir.; private; 50 beds.

Pines Cottages, at Silver City; T. S. Parker, propr.; private.

The Alameda, at Las Cruces, N. Mex.; 40 beds; private.

The Las Cruces Sanatorium, at Las Cruces; Dr. R. E. McBride, supt.; private; 40 beds.

General Hospital for Soldiers of U. S. Army, at Fort Bayard; Lt.-Col. E. T. Comegys, Deputy Surg.-Gen. U. S. A., phys.; 300 beds.

U. S. Public Health and Marine Hospital Service Sanatorium, at Fort Stanton, N. Mex.; Surgeon P. M. Carrington in command; 225 beds.

NEW YORK.

Montefiore Home Country Sanatorium, at Bedford Station, N. Y.; Dr. L. Rosenberg, supt.; 160 beds; philanthropic.

Sanatorium Gabriels, at Gabriels, near Paul Smith's, N. Y.; Sister Mary of Mercy, supt.; R. L. Strong, house phys.; 100 beds; Drs. S. A. Knopf and J. J. Walsh, cons. phys.; semi-philanthropic.

Stony Wold Sanatorium (for Incipient Tuberculosis in Women and Children), at Lake Kushaqua, Franklin Co., N. Y.; Dr. H. S. Goodall, phys.-in-charge; semi-philanthropic; 150 beds.

Loomis Sanatorium, at Liberty, N. Y.; Dr. Herbert M. King, phys.; 100 beds; private and semi-philanthropic.

The Edgemont, at Liberty, N. Y.; private.

"Mountain Sanatorium," at Binghamton, N. Y.; Miss Grace C. Wagner, supt.; public.

State Hospital for the Insane, at Binghampton, N. Y.; special pavilion for the tuberculous; 100 beds.

Erie County Hospital, tuberculosis wards, at Buffalo; Dr. E. J. Gilray, phys.; 54 beds; public.

Buffalo State Hospital, at Forest Ave., Buffalo; Dr. Arthur W. Hurd, med. supt.; tuberculosis wards; public.

Hospital for Incipient Tuberculosis, at Rochester, N. Y.; Dr. G. W. Coler, phys. in charge; 40 beds; semi-public.

State Hospital for Incipient Tuberculosis, at Raybrook, Franklin Co., N. Y.; Dr. John H. Pryor, phys.; $5.00 per week; 120 beds.

Adirondack Cottage Sanatorium, at Saranac Lake, N. Y.; Dr. E. L. Trudeau, phys.-in-charge; Dr. Lawrason Brown, res. phys.; 100 beds; semi-philanthropic.

Reception Cottage, at Saranac Lake, N. Y.; Dr. E. R. Baldwin, phys.; semi-philanthropic; 15 beds.

Raymond Cottage, at Saranac Lake; in charge of Mrs. Josephine R. Raymond; Dr. E. R. Baldwin, phys.; 14 beds.

Rumanapp Cottage, at Saranac Lake; in charge of Miss Rumanapp; Dr. Lawrason Brown, phys.; 20 beds.

Hill Crest, at Santa Clara, Franklin Co., N. Y.; for working girls and women; Dr. Caroline M. Hengel, res. phys.; 56 beds; private.

Springside Sanitarium, at Auburn, N. Y.; Dr. Nettie E. Jenkins, res. phys.; 15 beds; private.

All Saints' Home, at Verkank, Duchess Co., N. Y.; Pavilion for Tuberculous Patients; in charge of the Brothers of Nazareth; 10 beds.

Westchester County Hospital (Pavilion for Consumptives); Dr. Fred'k Baker, house phys.; 24 beds; public.

Brooklyn Home for Consumptives, 240 Kingston Ave., Brooklyn; Dr. E. Reynolds, phys.; Elizabeth A. Doyle, supt.; 120 beds; semi-philanthropic.

Seton Hospital, at Spuyten Duyvil, New York City; Dr. B. B. Steedly, phys.; 200 beds; semi-philanthropic.

St. Joseph's Hospital for Consumptives, East 143d St., New York City; Dr. Charles M. Cauldwell, phys.-in-chief; 350 beds; semi-philanthropic.

The House of Rest for Consumptives, Bolton Road and 209th St., New York City; George Sauer, supt.; philanthropic; 39 beds.

St. Peter's Hospital, at Henry, Congress and Warren Sts., New York City; Five Wards Reserved for Consumptives; conducted by the Sisters of the Poor of St. Francis; Dr. T. P. Corbally, phys. in charge; 75 beds; philanthropic.

Home for Incurables, Third Ave. and 181st St., New York City; Dr. Israel C. Jones, supt.; 275 beds; tuberculosis wards.

New York Postgraduate Hospital Annex for the Treatment of Tuberculosis (for poor patients only), at 322 E. 19th St., New York City; Dr. John F. Russell, phys. in charge; 12 beds; philanthropic.

Kings County Hospital Infirmary, Clarkson St., New York City; tuberculosis wards; Dr. F. W. Smith, res. phys.; 65 beds.

Montefiore Home (Ward for Consumptives), Broadway and 138th St., New York City; Dr. S. Wachsmann, phys.; A. Hausmann, supt.; philanthropic; 40 beds.

The Riverside Sanatorium for Pulmonary Diseases; Health Dept. of the City of New York, at North Brother Island; Drs. S. A. Knopf, W. J. Pulley and John H. Huddleston, visit. phys.; Dr. Samuel T. Watson, res. phys.; 60 beds; public; free.

Lincoln Hospital and Home (Tuberculosis Ward), 141st St. and South Boulevard, New York City; Amzi Lake, supt.; for colored; free; 40 beds.

Manhattan State Hospital East for the Insane, at Wards Island, New York City; Dr. A. E. McDonald, supt.; tuberculosis division.

Tent Colony for Tuberculous Men and Women of the Willard State Hospital for the Insane, at Willard, Seneca Co., N. Y.; Dr. Robert M. Elliott, supt.

County Hospital (Tuberculosis Ward), East View, Yonkers, N. Y.; public.

Phthisis Infirmary of the Metropolitan Hospital, at Blackwells Island, New York City; under homeopathic management; public; free; Dr. J. B. Mickle, chief of med. staff; 450 beds.

Seaside Tent Sanatorium for Scrofulous and Tuberculous Children of the Society for Improving the Condition of the Poor, at Seabreeze, Coney Island, N. Y.; Dr. M. Burnham, res. phys.; philanthropic; 54 beds.

Wards for Tuberculous Prisoners of Clinton Prison, at the Dannemora State Hospital, Dannemora, N. Y.; Dr. J. B. Ransom, med. officer.

NORTH CAROLINA.

The Winyah Sanitarium, at Asheville, N. C.; Dr. Karl von Ruck, med. director; 70 beds; private.

Southern Pines Sanitarium, at Southern Pines, N. C.; Dr. Edwin Gladmon, phys.; 30 beds; private.

Pineshire Sanitarium, at Southern Pines; Dr. L. F. High, phys.; 25 beds; private.

Franklin Humanitarian Home, at Black Mountain, N. C.; philanthropic; 12 beds.

St. Joseph's Sanatorium, at Asheville; conducted by the Sisters of Mercy; 25 beds; private.

Dr. Stevens' Home for Incipient Tuberculous Patients, at Asheville, N. C.; Dr. Martin L. Stevens; 8 beds; private.

Dr. Dunn's Sanitarium for Diseases of Throat and Lungs, Sunny Side, Sunset Mountain, Asheville, N. C.; private.

NORTH DAKOTA.

Oakpark Sanatorium for Consumptives, at Minot, N. D.; Dr. V. Mohn, phys.; 25 beds; private.

OHIO.

Cincinnati Branch Hospital for Consumptives, Cincinnati, Ohio; public; Dr. B. F. Lyle, phys.; 120 beds.

Municipal Tuberculosis Sanatorium, at Cleveland, Ohio; Dr. J. C. Placak, res. phys.; F. C. Emde, supt.; 75 beds; public.

Miami Valley Hospital, at Dayton, Ohio; Ella P. Crandall, supt.; tuberculosis division.

Western Hill Hospital and Sanatorium, at Price Hill, Cincinnati; Dr. Oswald Katz, res. phys.; 30 beds; semi-philanthropic.

PENNSYLVANIA.

West Mountain Consumptive Hospital, at Scranton; philanthropic. Dr. J. M. Wainwright, phys.; 26 beds.

South Mountain Camp Sanitarium, at Mt. Alto, Franklin Co., Pa.; Major Oliver B. Simmons in charge.

Bide-Awhile Sanatorium, at Perkiomenville, Pa.

Tent Camp for Tuberculosis Patients of the Columbus State Hospital for the Insane; 100 beds.

Mt. Jefferson Sanatorium at Lansford (Summit Hill P. O.), Pa.; Dr. W. H. Clewell, res. phys.; 25 beds; private.

Private Sanatorium of Drs. J. T. and A. M. Rothrock, at Mont Alto, Franklin Co., Pa.; 10 beds.

The Darmady Sanatorium at Mt. Airy, Philadelphia, Pa.; Miss Margaret G. O'Hara, matron; 25 beds; private.

Sunnyrest Sanatorium, at White Haven, Pa.; Elwell Stockdale, supt.; L. F. Flick, Joseph Walsh and William Stanton, vis. phys.; 50 beds; private.

White Haven Sanatorium of the Free Hospital for Poor Consumptives, at White Haven, Pa.; Drs. Shoemaker and Heller, phys.; Dr. Jas. H. Heller, supt.; 126 beds; philanthropic.

Switch Back Sanatorium, at Lansford, Pa.

Kane Summit Hospital, at Kane, Pa.; Mary J. Hayes, supt.; 50 beds.

Chestnut Hill Hospital for Female Consumptives, at Philadelphia; Dr. A. L. Bacon, res. phys.; Rev. H. L. Duhring, supt.; 65 beds; philanthropic.

House of Mercy for Male Consumptives, 411 Spruce St., Philadelphia; Dr. W. M. Agney, house phys.; Rev. H. L. Duhring, supt.; 12 beds; philanthropic.

Philadelphia Hospital (Wards for Consumptives), Thirty-fourth and Pine Sts., Philadelphia; Dr. M. H. Briggs, chief res. phys.; 174 beds; public.

Rush Hospital for Consumptives, 44 W. 33d St., Philadelphia; Elizabeth M. Brophy, supt.; 60 beds; philanthropic.

Henry Phipps Institute Hospital, 238 Pine St., Philadelphia; Lawrence F. Flick, phys.-in-chief; Mary Mahoney, supt.; 52 beds; philanthropic.

Free Tuberculosis Hospital for Consumptives of Pittsburg and Allegheny, 253 Shady Ave., Pittsburg, Pa.; Dr. Henry N. Hall, phys.; 50 beds; philanthropic.

Tent Camp in the Pocono Mountains for the Treatment of Consumption, at Greentown, Pike Co., Pa.; Dr. Albert S. Ashmead, phys.; private.

Lucien Moss Home of Jewish Hospital, at Philadelphia; Dr. Edwin D. Jareckey, res. phys.; 31 beds; philanthropic.

Reading Sanatorium for Tuberculosis, at Reading, Pa.

RHODE ISLAND.

St. Joseph's Hospital, at Providence; Wards for Consumptives; Sister Superior, supt.; Dr. Wm. Hindle, res. phys.; philanthropic; 24 beds.

Pine Ridge Camp for Consumptives, at Foster, R. I.; Dr. W. H. Peters, phys.; semi-philanthropic; 60 beds.

State Sanatorium, at Pascoag, R. I.; 100 beds.

State Almshouse, Tuberculosis Division, at Howard, R. I.; Dr. Geo. F. Keene, phys. in charge; 40 beds.

Tuberculosis Division of the State Hospital for the Insane, at Howard, R. I.; Dr. George F. Keene, supt.

SOUTH CAROLINA.

Aiken Cottage Sanatorium, at Aiken, S. C.; Dr. C. F. McGahan, phys.; 15 beds; semi-philanthropic.

Separate Building for Tuberculous Prisoners of the State Penitentiary, at Columbia, S. C.; Dr. D. J. Griffith, supt.; 50 beds.

TEXAS.

Camp Reliance, at Comfort, Texas; Dr. C. H. Wilkinson; private.

Wynne Farm Agricultural Colony for Tuberculous Prisoners, at Huntsville, Texas; Dr. W. E. Fowler.

White Gables, S. W. Texas Sanitarium, at Boerne, Kendall Co., Texas.

Sisters' Hospital, Hotel Dieu, at El Paso, Texa.; Tuberculosis Wing, 50 beds; conducted by the Sisters of Charity.

Dr. L. W. Cook's Sanatorium, at Boerne, Texas; private.

Dr. Briggs' Private Sanatorium for Diseases of Throat and Lungs, at Dallas, Texas; Dr. J. R. Briggs, phys.; 60 beds; private.

VERMONT.

The Champlain Open air Sanitarium, at South Hero, Vt.; Dr. H. E. Lewis, med. dir.; 30 beds; private.

Ward for Tuberculous Patients of the Vermont State Hospital for the Insane, at Waterbury, Vt.; Dr. M. Hutchinson, supt.; 22 beds.

VIRGINIA.

Camp for Tuberculous Patients of the Central State Hospital for the Insane, at Petersburg, Va.; Dr. Wm. T. Drewry, supt.; 70 beds.

WASHINGTON.

King County Hospital, at Seattle, Wash.; tuberculosis wards; 15 beds; Dr. Wm. T. O'Rourke, supt.; public.

WISCONSIN.

Evergreen Park Cottage Sanatorium, at Lake Nebagamon, Wis.; Dr. W. B. Hopkins, med. dir.; private; 15 beds.

Wisconsin Deals Sanatorium, at Kilbourn, Wis.

The Wisconsin Health Park Association, at Tomahawk, Lincoln Co.; Dr. W. T. Roberts, field secretary.

CANADA.

Free Home for Consumptives, at Gravenhurst, Ont.; Dr. Chas. D. Parfitt, phys. in charge; 75 beds; philanthropic.

Muskoka Cottage Sanatorium, at Gravenhurst, Ont.; Dr. J. H. Elliott, phys. in charge; 75 beds; semi-philanthropic.

Toronto New Consumption Hospital of the National Sanitarium Association, near Toronto, Ont.; Dr. Allan H. Adams, phys.; philanthropic.

Lhai Ghur Private Sanatorium, at Ste. Agathe des Monts, Quebec; Dr. Howard D. Kemp, phys. in charge; 16 beds.

Montreal Sanatorium for Consumptives, at Montreal, Quebec.

Provincial Sanatorium for Consumptives, at Montreal, Quebec.

Wolfville Highlands Sanatorium, Nova Scotia.—Dr. G. E. DeWitt, med. dir.; 8 beds; private.

LIST OF DISPENSARIES AND CLINICS FOR PULMONARY TUBERCULOSIS.

CONNECTICUT.

New Haven Dispensary Tuberculosis Clinic, Congress Ave., New Haven, Conn.; Dr. H. M. Steele, phys. in charge.

ILLINOIS.

Dispensaries of the Committee on the Prevention of Tuberculosis of the Visiting Nurses' Association, 79 Dearborn St., Chicago, Ill.; Dr. Arnold C. Klebs, med. dir.

MARYLAND.

Out-patient Department, Johns Hopkins Hospital, Baltimore, Md.

DISTRICT OF COLUMBIA.

Tuberculosis Dispensary, 605 4½ St. S. W., Washington, D. C.

MASSACHUSETTS.

Boston Dispensary, at Bennet and Ash Sts., Boston, Mass.; Dr. Edward O. Otis, supt.

Tuberculosis Clinic—twice a week—at City Hospital, Worcester, Mass.; Dr. Albert C. Gotshell, phys. in charge.

MINNESOTA.

Hamlin University Free Dispensary, at Minneapolis; Dr. G. G. Poehler, phys. in charge.

State University Free Tuberculosis Dispensary, S. Washington Ave., Minneapolis; Dr. Henry L. Ulrich, phys. in charge.

NEW JERSEY.

Orange Memorial Hospital Dispensary, at Orange, N. J.; Dr. Henry A. Tulsford, phys. in charge.

NEW YORK.

Gouverneur Hospital Dispensary, Front St., New York City; Drs. Gilbert and Bradford in charge.

Clinic for Pulmonary Diseases of the Health Department of New York City, at 6th Ave. and 55th St.; Dr. Herm. M. Biggs, director; Drs. J. S. Billings, Jr., and S. A. Knopf, assoc. directors.

Special Classes at the Vanderbilt Clinic for the Treatment of Tuberculosis; Dr. Linsey R. Williams, phys.

Special Classes at Bellevue Hospital Dispensary; Dr. James Alexander Miller, phys.

New York Postgraduate Hospital Dispensary (Dr. Russell's Classes).

Dispensary for Consumptive Poor of the New York Throat, Nose and Lung Hospital, 59th St., near 2d Ave.; Drs. Birmingham, Barton, Goldstein and Wheeler, phys.

Presbyterian Hospital Dispensary, New York City.

Harlem Hospital Dispensary, Foot of East 120th St., New York City; Dr. Charles H. Moak, phys. in charge.

OHIO.

Tuberculosis Dispensary of the Western Reserve University, at Cleveland, Ohio; Dr. T. H. Lowman, phys. in charge.

PENNSYLVANIA.

Tuberculosis Dispensary of the Scranton Society for the Prevention and Cure of Consumption, 203 Linden St., Scranton, Pa.

Henry Phipps Institute Dispensary, 238 Pine St., Philadelphia.

Rush Hospital Dispensary, Lancaster Ave. and Thirty-third St., Philadelphia; Dr. John D. McLean.

Dispensary of the White League, 1515 Arch St., Philadelphia; Dr. Joseph P. Craney, phys.

RHODE ISLAND.

Out-patient Department of the Rhode Island Hospital, at Providence; Dr. Jay Perkins, supt.

I hope that the foregoing list is a complete one, and still the possibility of errors of omission and commission exists. Worthy institutions may have been established since of which I have not heard, and thus they may have been inadvertently omitted; some institutions

may have been reported to me as sanatoria, taking care of tuberculous cases exclusively, while in reality they are sanitaria or homes where all classes of patients are received. If these are mentioned in my list, they ought not to have been included. In this list we read the names sanatorium, sanitarium, hospital, home, etc. This brings me to a subject of which I like to speak in connection with the designation or naming of institutions consecrated to the exclusive treatment of tuberculous invalids.

The proper designation for an institution which receives patients afflicted with pulmonary or laryngeal tuberculosis only is, in my humble opinion, sanatorium. May I be permitted to state why I prefer the word sanatorium to sanitarium? Brehmer, the founder of the first institution of that kind, called it *Heilanstalt,* which means healing institution; and the word "sanatorium," from the Latin *sanare,* to heal, gives certainly a better equivalent for the German word than the word "sanitarium." This latter word is derived from the Latin, *sanitas,* health, and is usually employed in this country to designate a place considered as especially healthy, a favorite resort for convalescent patients, or an institution for the treatment of mental or nervous diseases. It is well and useful from all points of view to make a distinction that the special uses and purposes of the tuberculosis institution may be understood readily.

The word "sanitorium," so frequently used, is simply incorrect. May I say in addition that the word sanatorium has been adopted as an official name by the United States Government for the institutions for its consumptive sailors and soldiers; also that the name of the Massachusetts state institution is sanatorium and not sanitarium, and that the former Loomis Sanitarium has been changed to Loomis Sanatorium, Sharon Sanitarium to Sharon Sanatorium, and that all the more recently established institutions for the exclusive treatment of tuberculous patients in this country, Canada and England have adopted the name sanatorium? As mentioned above, Germany calls these institutions *Heilanstalten,* and all other European nations call institutions of that kind sanatoria.

Special hospitals for the treatment of tuberculous patients are particularly useful institutions, because they are, as a rule, located in or very near large centers of population. They are supposed to receive the more advanced and hopeless cases which in their home environment can not or do not receive the necessary care, and often constitute centers of infection. Of the value of such institutions I can not speak too highly, and personal experience at the Riverside institution of the health department of the City of New York has made me quite enthusiastic over the work which can be done in such establishments. This institution, which we call Riverside Sanatorium, located on North Brother Island, opposite East 138th St., was established on the urgent appeals of Dr. Hermann M. Biggs, the general medical officer and his colleagues of the board of health. Thanks to a law, which I believe exists only in New York, and which Dr. Biggs promulgated, we have in New York a right to remove any tuberculous patient from his home to one of the city tuberculosis institutions if in the opinion of the medical inspector the patient constitutes a danger to his environment.

The results obtained with these patients, forcibly removed from their unhygienic surroundings to our Riverside Sanatorium, which is, of course, only a city sanatorium, is surprising. It is very often one of the hardest things to induce patients to leave the institution, when, in our opinion, the disease has been sufficiently arrested and warrants the discharge of the patient. The clean, sanitary surroundings, the regular mode of life, and the personal interest which is taken in every case, makes most of these patients become attached to the institution, and the prospect of being obliged to return to unsanitary environments and other former unpleasant conditions is the cause of their disinclination to leave.

The difficult problem of what to do with the cured consumptive, of which I will speak later on, has never come to me with more seriousness than when I am about to discharge a patient from the Riverside Sanatorium. Yet I would suggest that the law which gives our health department the right to forcibly remove to a special tuberculosis institution a patient who plainly constitutes a danger to his environment, is a wise one and well worth trying in other large American cities. Even if we are not able, for the present, to provide work for all our discharged consumptives (we strive to give employment to as many as possible as helpers and orderlies), the training they have received and the orderly life they have been forced to live, will rarely fail to leave its impression. I can modestly claim that a goodly number of the men and women sent out from the health department's institution at North Brother Island, whether cured or only improved, on their return to their former homes constitute themselves missionaries and hygienic examples among the members of their families, their neighbors and friends.

The "Homes for Consumptives" I have never liked, for, from my experience of a visit to a number of them I gained the impression that the so important hygienic and sanitary measures in these institutions are never so rigidly adhered to as in sanatoria and special hospitals. There are, as a rule, fewer nurses and fewer attendants, and herein, I believe, lies the mistake, for if the patient ever needs the constant care of a watchful nurse it is in the last stages of the disease. Now, the word "Home" indicates that the unfortunate consumptive will remain there until his dissolution. This is another important reason why I do not like the word "Home." I am convinced many enter the home for consumptives who before were perhaps full of hopes for a recovery, and many even enter it in a condition when recovery would seem possible. Why may we not just as well call every home a sanatorium and make it such? This is what it should be—a sanatorium—a healing institution.

The next class of institutions which we wish to speak of are seaside sanatoria for tuberculous and scrofulous children. I have only a single one on my list; they are worth our consideration. Seaside sanatoria for scrofulous and tuberculous children serve to take care, throughout the whole year, of children afflicted with joint, osseous and cutaneous tuberculous troubles, and all children afflicted with milder manifestations of tuberculous character, generally designated as scrofulosis. Another important factor of such seaside sanatoria is to attend to the after-treatment of children operated on for tuberculous joint troubles in the city, and to keep them during their convalescing stage. It was my privilege to serve for some time as assistant to such an institution in France. There, in the celebrated institution at Berck-sur-Mer, belonging to the city of Paris, we received weekly from ten to twenty-five little ones who

had been operated on. The change which was wrought in the faces of these children after a few weeks' sojourn at the seaside was something hard to believe. These pale-faced, underfed children, coming mainly from the homes of the poor of Paris, became rosy-cheeked and healthy looking youngsters in the ozone-laden atmosphere of the sea coast. A school with a number of teachers is attached to that institution so that the intellectual development of the children may not suffer during their sojourn in the sanatorium. I trust that the example given by the New York Society for improving the Condition of the Poor in the creation of such an institution at Seabreeze near New York, will find numerous imitators among the philanthropists and municipalities of our country.

It must be evident to every physician and sanitarian that multiple sanatoria for the treatment and care of tuberculous children is one of the most important factors in the fight against consumption. The child thoroughly cured from its tuberculous affliction by the best of surgical, orthopedic, hygienic, dietetic and climatic treatment is not likely to become a consumptive adult, while every child with a neglected local tuberculosis must always be considered a candidate for consumption.

Pulmonary tuberculosis is relatively rare in little ones, but even for those few, I am happy to say, we have some provisions in the State of New York. As you will have noticed in my statistics, the Seton Hospital as well as the Loomis Sanatorium, have made special provisions to treat children suffering from pulmonary tuberculosis.

The next kind of institution to be considered as an important factor toward the solution of the tuberculosis problem is the special tuberculosis dispensary. As a definition of this institution permit me to use here the same words which I used as introductory remarks in my address recently delivered before the New York Academy of Medicine to open the discussion at a symposium on special tuberculous dispensaries

A modern tuberculosis dispensary is an institution created, built, equipped and managed for the exclusive treatment of indigent persons afflicted with pulmonary or laryngeal tuberculosis. The modern conception of the treatment and management of ambulatory tuberculous cases demands the creation of such institutions. Those of us who began our medical career fifteen or twenty years ago will remember the almost universal indifference of our teachers as well as ourselves when in our dispensary practice we came across a tuberculous case. The sooner we could dispose of it the better we thought we did our duty. Some cough mixture and some cod-liver oil was the routine treatment. There was no time, nor did we think it necessary, to teach the patient to take any precaution with his infectious sputum, or to give him any other hygienic instruction. The value of breathing exercises in such cases was thought of by but few.

How different is it to-day. To avoid as far as practicable the contact of the tuberculous patient with other patients, separate classes are created in many of our general dispensaries; but the ideal, of course, must always be the entirely separate and especially constructed tuberculosis dispensary.

Besides the institution with which I have the honor of being connected, and which, to the best of my knowledge, is the first municipal dispensary especially built for that purpose in the United States, there are at this moment in New York six other dispensaries which have special classes for tuberculous cases. From my list you will see that Boston, Baltimore, Philadelphia, New Haven, Scranton, Minneapolis, Chicago, Worcester and Providence are the other cities in the United States which have thus far created special tuberculosis dispensaries.

The setting aside of a ward for tuberculous patients in a general hospital, an insane asylum or prison seems to me, while not nearly as good as a sanatorium, special hospital or special camp, the next best thing to it. Quite satisfactory results can often be obtained when in a general hospital the best ventilated and best lighted ward—which is usually the upper story—can be used for that purpose. The results in a special tuberculosis ward at a general hospital can be enhanced when there is a roof garden in connection with the ward, and outdoor life and outdoor sleeping can thus be inaugurated in the city. This is very desirable during hot weather, and in connection with it I would suggest that on the top of nearly every hospital a roof garden can be improvised with a covering of canvas to which are attached side flaps when protection from sun and rain is necessary; with a few flowers and shrubs here and there this improvised roof garden can be made very attractive, and the whole installation accomplished with relatively little expense.

By an exhaustive inquiry, previous to the publication of my article, "A Plea for Justice to the Consumptive," I learned from authorities well qualified to speak on this subject that tuberculosis more frequently follows the development of insanity than precedes it. Or, if I may use here the words of Prof. Edward D. Fisher, who kindly wrote me at the time: "Tuberculosis is more common in the insane as a result of lowered vital condition than as a cause of the mental disease." When the insane individual, with a thus lowered vital condition, comes in close prolonged contact with another insane person who is tuberculous, is it a wonder when a non-tuberculous insane person in an overcrowded insane asylum contracts tuberculosis?

That something can be done for even the insane tuberculous patient, that all can be isolated and a number of them cured of both their physical and mental infirmities, has been beautifully demonstrated by the tent life inaugurated by Dr. McDonald and his associates at the Manhattan State Hospital for the Insane on Ward's Island.

Concerning tuberculosis in prisons, I wish to speak with particular emphasis, for while here and there provisions for the treatment of tuberculous prisoners have been made, there is still much and urgent work in this direction before our public sanitarians and the managers of prisons and reformatories in many of the states of the Union. For the good of society we must confine the criminal and punish him, and above all, we seek to reform him by years of seclusion, according to the gravity of his offense. But however great the crime he may have committed, we have no right to sentence him to contracting tuberculosis, which, as prison life is now in many of our states, must almost invariably result in death. The best solution of the tuberculosis problem in regard to prisons is, to my mind, that which has been successfully tried by the Texas Agricultural Colony for Tuberculous Prisoners. Instead of letting them linger and suffer in isolation and die in degradation, the Agricultural Colony of Texas strives to make of its tuberculous prisoners useful and healthy members of society. It is always a pleasure to note that the

most humane undertakings are blessed with financial success; $25,000 remained as net earnings during the first year of the existence of the Texas Agricultural Colony for Tuberculous Prisoners. May the example of this state lead to the establishment of many such colonies.

My suggestions for the establishment of agricultural and horticultural colonies are, however, not only intended for tuberculous prisoners. I plead with equal emphasis for the establishment of such for the honest tuberculous patients who have faithfully passed through the schooling in a sanatorium; who have learned to prevent infecting others or reinfecting themselves; who leave the sanatorium virtually cured, but by no means strong enough to take up the old occupations which, in many instances, had rendered them tuberculous. It is a grave and serious problem what to do with the cured tuberculous patient, who was formerly a stone cutter, a printer, a tailor or a hat maker, etc. Shall we return him to his former unhygienic occupation—to his insanitary work or sweat shop? The time and money expended for sanatorium treatment would have been spent in vain if these toilers must return to the same environments. It is a medical, social and financial problem, and those who provide sanitary occupation for cured consumptives so that they may live and labor after their restoration to health and remain well, will do as much for the solution of the tuberculosis problem as the founders of sanatoria and special hospitals.

This report on the antituberculosis work done during the last few years would indeed be incomplete without mentioning the first tuberculosis exposition in the United States, held in Baltimore from Jan. 25 to Feb. 1, 1904. From a local attempt to give the people of Maryland an object lesson in the prevention of tuberculosis, this exposition grew to be a national enterprise, an educational center of the history, distribution, variation, causes, cost, prevention and cure of tuberculosis.

The exposition was held under the auspices of the Tuberculosis Commission of Maryland conjointly with the board of health of the same state and the Maryland Public Health Association. There were exhibits from all parts of the United States, from Canada and from other foreign countries. The exposition was divided into numerous divisions, one of the most instructive being the statistical section. Mortality and morbidity of tuberculosis and their relation to race, age, sex, occupation, heredity, marriage, topography and geography were graphically demonstrated. The charts exhibited by the Prudential Life Insurance Company, showing the variations of the occurrence of tuberculosis in different races, sexes and classes of people, were particularly interesting. A large map had been prepared by the Baltimore health board, showing all the houses in which there has been a death from tuberculosis in the ten years from 1890 to 1900. Each of these 11,582 deaths was indicated by a red dot; the worst area, consisting of ten squares crowded with negroes, showed 175 deaths. Another section of the exhibit showed sanitary and insanitary tenements, factories and workshops. Pictures of "lung blocks," that is to say, buildings which are particularly infected by tuberculosis, were shown from the city of New York and Baltimore. They taught a fearful object lesson of overcrowding, filth, lack of air and light.

The committees for the prevention of tuberculosis of New York, Chicago, Boston and Baltimore showed by statistics, literature and photographs the work they had accomplished independently of municipal aid. Nearly all the states of the Union and the provinces of Canada, where state and municipal health boards are engaged in the prevention of tuberculosis, sent charts, drawings and pictures, showing their really surprising activity during the last few years. New York City took the lead by showing a reduction in the mortality from tuberculosis by one-third of what it was ten years ago. The health department of New York City also exhibited its celebrated "Circular of Instruction to Consumptives and Those Living with Them," besides photographs of its Riverside Sanatorium and the new Clinic for Pulmonary Diseases.

The directors of nearly all the American and Canadian sanatoria and special hospitals for the treatment of consumption sent photographs of their institutions. It was my privilege to send my collection of views—German, English, French, Swiss, Scandinavian and Austrian sanatoria, and also the excellent photographs of Brehmer, Dettweiler, Koch and Trudeau. (The latter is the pioneer of the sanatorium treatment in America.)

There were a large number of tents, model cottages, reclining chairs, elevated, fixed, pocket and other kinds of spittoons. Of great interest was the excellent collection of books and portraits sent by Professors Osler and Jacobs. The pathologic exhibit, which owed its existence to Professor Welch of Johns Hopkins Pathologic Department, was unusually interesting. It was visited by many physicians and students. Trained demonstrators were constantly present to explain the pathologic specimens and bacteriologic exhibits. A very unique way of making the exposition a thorough educational center for the laity was arranged by Dr. Fulton. He divided the visitors in groups of twenty or twenty-five, and assigned to each of these one of the young enthusiastic physicians who had volunteered their services as guides and demonstrators. A very important and interesting feature of the exposition was the evening lectures by a number of specialists.

The tuberculosis exposition was an unqualified success. It had not only the support of the best men of the Baltimore medical profession, but His Excellency, the Governor of Maryland, His Honor, the Mayor of Baltimore, and a number of distinguished Baltimore citizens lent their moral and financial support to the success of the undertaking.

A similar exhibition, although on a much smaller scale, took place recently in Boston (October 1904), in connection with the Mechanics Fair. The Association for the Relief and Control of Tuberculosis of Boston had arranged a most creditable and instructive exhibit of things and literature relating to the modern modes of prevention and treatment of tuberculosis. The citizens of Boston and the surrounding country paid unusual attention to the tuberculosis corner. It would seem that such object lessons in the prevention of tuberculosis might well be imitated by other large cities.

I do not report this time anything concerning laws to combat bovine tuberculosis, nor have I enumerated special regulations or ordinances issued concerning the prevention of tuberculosis in man. Few changes have occurred since my last report (November, 1902.) I wish to state, however, that an additional number of cities have enacted antispitting laws. Koch's declaration at the last international tuberculosis congress in London, concerning the relative rarity of the transmission of bovine tuberculosis to man, has not influ-

enced American authorities to lessen existing measures to prevent the spread of bovine tuberculosis or its transmission to man; yet there is a great variety in these bovine laws in the different states, and perhaps a greater variety existing concerning the laws and regulations to prevent tuberculosis in man.

As in my previous report, so must I say in this one that a "ministry of health" at Washington, a "United States Board of Health," to be in constant touch with all the state and city boards of health in the Union, with effective laws to combat tuberculosis in man and beast throughout the Union, is the only remedy for the lack of uniformity and effectiveness of antituberculosis laws in this country.

To any one who has studied the tuberculosis problem in its social as well as in its medical aspect, it must be evident that its solution can only be accomplished by effectual co-operation. I have just expressed my views as to how the work of the state and city boards of health could be made more effective by co-operation with a national board of health. The purely medical aspect of the disease will, I know, be intelligently studied by our new organization above referred to; but what I plead for most insistently is that the philanthropists, laymen and physicians, composing the various organizations, commissions and committees, may be in constant co-operation with a "Federal Committee" or permanent "National Bureau for the Prevention of Tuberculosis," to which the new society, I trust, will give the incentive, in order to avoid useless multiplication of work on the one hand, and increase effectiveness of needed work on the other. For example, if two adjoining states find it advantageous to combine in establishing a state sanatorium, let them not hesitate for reason of local pride to carry out the project. A large city may have a dozen associations, commissions or committees on the prevention of tuberculosis. When it comes to establishing an institution, let them be united in the project; and when it comes to taking care of a needy patient, let him be referred to a single subcommittee, whose duty it should be to investigate the case and provide for the patient in such a way as is best for his own interest and that of the community. The philanthropist should not give blindly, but should inform himself first where the need of his help is greatest, for there are many phases in the solution of the tuberculosis problem. While in one city it might be wiser to establish a dispensary for tuberculosis; in another it may be wiser to start a sanatorium, and in another an agricultural colony may be needed; while in others the creation of more playgrounds, parks, public baths and model tenements may be of the greatest importance and the greatest necessity.

The little motto with which I prefaced, some years ago, an essay entitled "Tuberculosis as a Disease of the Masses and How to Combat It," is applicable to-day, and I believe will be as long as there is a tuberculosis problem: "To combat tuberculosis as a disease of the masses successfully requires the combined action of a wise government, well-trained physicians and an intelligent people."

Alcoholic Nostrums Too Strong for Lumbermen.—Loggers in the northern woods seek to discourage the use of patent medicines in their camps, as the "lumber-jack" is inclined to use them as a substitute for alcoholic exhilaration, to the subsequent disturbance of his working powers.—*Northwestern Druggist.*

THE ASSOCIATION OF OPTIC NEURITIS AND FACIAL PARALYSIS.*

EDWARD A. SHUMWAY, B.S., M.D.
PHILADELPHIA.

The relative infrequency with which optic neuritis occurs in association with facial paralysis makes the following case worthy of record:

The Patient.—Miss G. W., age 19, came to the eye dispensary of the University Hospital, Philadelphia, Dec. 8, 1903, in the service of Dr. George E. de Schweinitz, to whose courtesy I am indebted for permission to publish the case. She complained of blurring of print and aching in the eyes in reading or other close work. She was unaware that her eyesight had failed, but examination showed that vision of the right eye was 6/15 and of the left eye only 6/30. She was able to read Jaeger 0.50 D. with each eye at 13 cm. slowly.

Ophthalmoscopic Examination.—There was atrophy of each optic nerve, more advanced on the left side. The nerve heads were covered with a delicate, white tissue, which blurred their edges, and could be traced in the form of white lines along the central vessels of the retina. The veins were of good caliber, but the arteries were reduced to mere threads at the disc, though they were somewhat fuller at a distanc from it. The fundus in each eye was otherwise normal. The picture was, therefore, a typical one of post-papillitic atrophy. The pupils were equal and responded rather sluggishly. The visual fields are shown in the accompanying chart (Fig. 1). They were moderately contracted, both for form and color, but showed no color scotomas. Under reduced illumination O. D. vision was only 6/30, and O. S. 2/60. With de Wecker and Masselon's photometric test the light sense was 4/10 in the right and 1/10 in the left eye. There was in addition a flattening of the right side of the face and a decided enophthalmus on this side.

History.—Careful questioning as to previous history brought out the following facts: She was the youngest of ten children, two of whom died in early childhood, one of diphtheria and the other of "enlargement of the heart." The rest were healthy and had had no eye trouble. She had always been very pale, and suffered from irregular menstruation, the amenorrhea lasting sometimes for several months. She had had measles alone of children's diseases, and no recent acute illness of any kind. On Nov. 1, 1902, she consulted Dr. James E. Talley of Philadelphia for paralysis of the right side of the face, which appeared after exposure to a draught, and was preceded and accompanied by severe pain in the lower jaw and teeth, and in front of the ear, on the same side. Dr. Talley found a typical facial paralysis of the peripheral type, but noted no areas of anesthesia. The face was flaccid, the mouth was drawn to the left and she was unable to close the right eye. There was no ear disease present, but she was very anemic, and gave the history of menstrual disturbance. Blood examination showed red blood corpuscles 4,268,000, white blood corpuscles 5,200, and hemoglobin 90 per cent. Dr. Talley thought the blood examination incorrect, especially as to the percentage of hemoglobin, owing to a defect in the instrument, but she did not return for further examination. The urine was alkaline, specific gravity 1,022, and contained neither albumin nor sugar; microscopically it was negative, except for phosphates.

Treatment.—She was treated with salicylates, strychnia, massage, electricity, and later iron. Three weeks afterward there was some return of motion in the face and the mouth was straighter, but the eye could not be closed. Early in December, 1902, she left the city, and was under the care of Dr. R. P. Heilman of Emporium, Pa., who prescribed iron and general tonic treatment. Dr. Heilman reports that he detected some anesthesia of the right side of the face, but no complaint was made of any disturbance of vision. The patient says, however, that on one occasion, when sent to the library for a book, she was unable to see the title in the poorly lighted

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-fifth Annual Session, June, 1904.

room, but aside from this did not have her attention called to her eyes, which were neither painful nor in any way inflamed. On her return to the city in March, 1903, the motion of the face had become nearly normal, but her mother stated that the right eye was "smaller" at the time than the left, although they had been of the same size before. Dr. Talley saw her in October, 1903, and again treated her for irregular menstruation.

Examination.—Examination by Dr. William G. Spiller showed a slight stiffness of the right side of the mouth; the

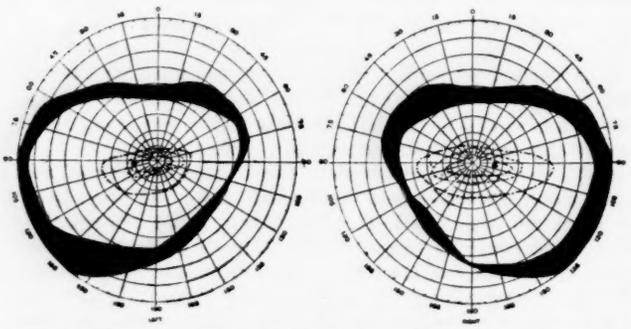

Fig. 1.—Case 1. Fields taken Jan. 6, 1904. Concentric contraction for form and color. No scotomas.

eye could be readily closed; there were no areas of anesthesia of the face or conjunctiva; the skin was entirely normal in appearance, but there was a distinct loss of subcutaneous fat which made the face flatter on the right side, and a sinking backward of the eyeball, as the accompanying photograph shows (Fig. 2). The electrical reactions, tested by Dr. C. S. Potts, were normal and no weakness of the muscles of mastication could be detected.

Examination by Dr. William B. Stanton in the medical dis-

Fig. 2.—Case 1. Flattening of face and enophthalmus after facial paralysis associated with double optic neuritis.

pensary showed normal lungs, slight extension upward of the heart dullness, on the left of the sternum, and a soft systolic murmur on lying down, heard best at about the third interspace, just to the left of the sternum, which disappeared on standing, and was probably hemic. The pulse was rapid but regular. Blood examination showed red blood corpuscles 4,248,000, white blood corpuscles 13,500, and hemoglobin 58 per cent. The urine was slightly cloudy, 1,030, no albumin or sugar; numerous epithelial cells but no casts.

Treatment.—Under atropin a vision of 8/22 was obtained in each eye, with + 0.25 s + 0.25 c ax. 90°. The patient was given strychnia sulphate, gr. 1/40, and Blaud's mass, gr, iii, three times daily. Subsequent examination showed a decided improvement in her general condition; her color became better, menses were regular and free from pain, and the blood test on April 6, 1904, showed red blood corpuscles 5,790,000 and hemoglobin 70 per cent. The vision at present is 6/20 in the right and 1/45 in the left, and the fields, taken May 20 (Fig. 3), show a slight reduction of the form field, and a marked reduction for red and green, but no color scotomas.

Summing up, we have an anemic girl with menstrual disturbance, who developed a peripheral facial paralysis of the right side, followed by flattening of the face and enophthalmus, which was associated with double optic neuritis and atrophy.

Several questions suggest themselves in considering the history of the case. In the first place, the etiology of the optic neuritis and the relation between it and the facial paralysis; secondly, the cause of the flattening of the face and the enophthalmus. Unfortunately, it is impossible to determine definitely the time of occurrence of the optic neuritis. The girl, however, had no trouble with vision or in the use of her eyes while at school, or in her occupation as a stenographer, and no deterioration in vision was noted until her absence from the city, during the attack of facial paralysis. This history is vague, but as no asthenopic symptoms were present until she commenced to use her eyes, on her return, we may assume, although without certain proof, that the neuritis

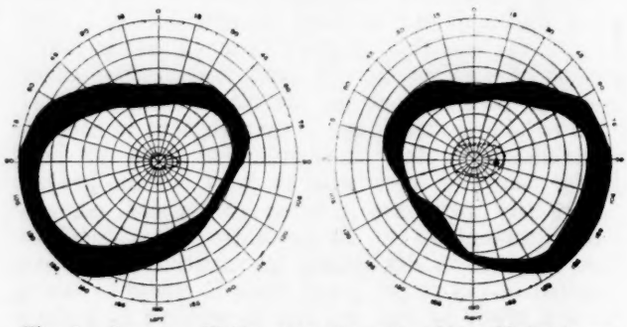

Fig. 3.—Case 1. Fields taken May 20, 1904. Moderate contraction of form fields. Marked contraction of color fields.

and facial paralysis occurred about the same time. The association of the two conditions is quite uncommon. In 1894 Hoffmann[1] described two cases of facial paralysis, associated with low-grade optic neuritis, retrobulbar in type, with central scotomas for colors, and considered them as cases of multiple neuritis due to cold. He said that optic neuritis was very rarely associated with facial paralysis, and that Gowers had seen three cases of rheumatic optic neuritis in women, two of whom had suffered from neuritis of the facial nerve and other rheumatic affections previously. De Schweinitz[2] reported two cases in 1899, in which the optic neuritis, which was retrobulbar in type, with central scotomas, occurred two years after an attack of facial paralysis. In the first case, both eyes were affected, but not at the same time; in the second, there had been several attacks of sclerokeratitis, two attacks of right facial paralysis, and finally left-sided optic neuritis. Leszynsky[3] reported a case before the New York Neurological Society in 1900, in which, during an attack of facial paralysis, severe pain appeared in the supraorbital and temporal regions on the left side, which lasted about one week, when the

1. Hoffmann: Deutsche Zeitschr. f. Nervenheilkunde 1894, vol. v.
2. De Schweinitz: Jour. Mental and Nervous Diseases, May, 1899.
3. Leszynsky: Jour. Mental and Nervous Diseases, March, 1900.

patient became blind in this eye; the ophthalmoscopic examination revealed a well-marked papillitis. He attributed the optic neuritis to periostitis in the optic canal, so that the condition was a multiple neuritis, probably due to rheumatism, although syphilis could not be positively excluded.

These 7 cases added to the present one, make a total of only 8 reported; the association is, therefore, quite rare. A number of cases of optic neuritis, however, has been reported in polyneuritis. According to Remak[4] in Nothnagel's System, it has been found by E. Remak, Goldscheider and Fuchs in spontaneous (infectious) polyneuritis, by Schanz in puerperal forms, with carcinoma (autointoxication) by Miura, in alcoholic polyneuritis by Lillienfeld, Giese and Pagenstecher, and Jolly. Other cases have been reported since Remak's article was written. For example, Wetz, in his inaugural dissertation, Giessen, 1903, gives a case of bilateral recurring retrobulbar neuritis, appearing at long intervals, associated with polyneuritis. But even the number of such cases is limited, and, with but few exceptions, the neuritis is retrobulbar in type, in both series.

Facial paralysis, according to Bernhardt,[5] is caused in about 72 per cent. of all cases by rheumatism or cold, and in our case the history of taking cold after exposure to a draught, points perhaps to this cause as the etiologic factor. Rheumatic optic neuritis was first carefully described by Parinaud[6] in 1884, and we owe most of our knowledge of these cases to his studies. In the majority of instances there is a family and personal history of rheumatism; the acute cases usually commence with deep orbital pains, and pain in movement of the eyeballs, which is increased by pressure on the eye. Very often it is accompanied by conjunctival and scleral congestion. The neuritis may be simple in type, or of the character of a choked disc; it is ordinarily monocular, and when it attacks both eyes it is successive. The most characteristic feature is the complete amelioration, which may follow a state of affairs apparently very grave, as the visual acuity may fall to zero, during the attacks, and yet return nearly to normal afterward. In several important respects, therefore, our case differs from the typical one of rheumatic neuritis. The absence of a rheumatic history, of spontaneous pain in the eyes, or on movement, the bilateral occurrence, and the permanent reduction in vision to 6/20 on one side and 1/45 on the other, with the formation of considerable connective tissue on the surface of the disc, would point to some other factor. Two conditions must be considered here—the chloranemia and the menstrual disturbances, in both of which optic neuritis may occur, and in which complete or partial recovery is possible, in contradistinction to the cases due to brain tumor, where the ultimate result is usually complete blindness, with marked atrophy of the papilla. The blood condition in our patient did not show a sufficient reduction in the hemoglobin to warrant a diagnosis of chlorosis, however, so that we must assume either that the menstrual disturbance was the direct cause, or else that the facial paralysis and optic neuritis were due to one and the same, still undetermined, perhaps bacterial, infection, a belief which is shared at present by many neurologists.

The other question as to the causation of the enophthalmus and flattening of the face opens up problems which are still under debate in neurologic circles. I have been unable to find any mention of such a condition following facial paralysis. Gowers,[7] in his well-known text-book, says that "muscular wasting follows the nerve degeneration in the face, as elsewhere, and in those who have but little subcutaneous fat, the oss of tissue may be perceptible." But "the nutrition of the subcutaneous tissues in unaffected, and true facial hemiatrophy never results from disease of the facial nerve." Nothing is said, however, of the occurrence of enophthalmus. Through the kindness of Dr. Wm. G. Spiller of Philadelphia I was able to examine a case of his, presenting the same condition, and I am permitted to refer to it here:

The patient, Mrs. Rosa K., aged 52, suffered from peripheral right-sided facial paralysis after exposure to cold, in July, 1902. At the time of the attack she had severe pain on this side of the face. On examination in February, 1904, nineteen months afterward, the paralysis had disappeared except for slight stiffness of the face, but there was a decided flattening of this side, and distinct enophthalmus. The eyes, however, showed no ophthalmoscopic changes, and vision was normal in each eye, with the proper correction of a low refractive error.

The two cases have a history in common of paralysis following exposure to cold or draught, and of severe pain in the face and jaw lasting for several days. Neither presents a picture of typical facial hemiatrophy, for atrophy of the skin, with discoloration and thinning, constitutes the chief sign in this disease, and is absent in both. Simple wasting of the muscular tissue, as described by Gowers, would not account for the enophthalmus, and we are forced to look for some other cause. Sensory disturbances in facial paralysis, both subjective and objective, have long been known. Pains in the head and corresponding side of the face very commonly precede or accompany the attack, and some authors (Testaz[8]) ascribe a prognostic value to them. Disturbance of sensation is less rarely mentioned. Gowers has observed an anesthetic area in front of and behind the auricle, and, in more recent times von Frankl-Hochwart[9] and his pupil, Hatschek, have found decrease in general sensitiveness, pain and temperature perception in moderate degree in about 50 per cent. of their cases. More rarely vasomotor secretory changes are observed. There exists, further, in literature, according to Bernhardt,[5] a number of observations in which, simultaneously with more or less severe facial paralysis, there appeared an eruption of herpes zoster facialis or occipito-collaris, or both together. Von Frankl-Hochwart[9] believes that the seventh nerve carries a number of sensory fibers at its exit from the mastoid foramen, in addition to those which have passed into the chorda tympani, during its passage through the fallopian canal. This view has been strongly contested by many, but has received additional proof from experiments of Van Gehuchten,[10] who has shown that the nerve contains a certain number of sensory fibers which arise in the geniculate ganglion, and he believes that the nerve of Wrisberg is its sensory root. This question is still a matter of dispute, which we can leave to the neurologists to settle.

In our cases the assumption of involvement of possible sensory fibers in the seventh nerve will not be sufficient, as it would not account for the enophthalmus. This must be due to some nutritional disturbance of the

4. Remak and Flatow: Nothnagel's Specielle Pathologie u. Therapie, vol. xi, p. 111, No. 4; full literature given here.
5. Bernhardt: Ibid., vol. xi, No. 1, Erkrankungen der peripherischen Nerven.
6. Parinaud: Report in Annales d'Oculistique, vol. cv, Nos. 5 and 6.
7. Gowers: Diseases of the Nervous System, second edition.
8. Testaz: Paralysie douleureuse de la septième paire. These de Paris, 1887.
9. v. Frankl-Hochwart: Neurologisches Centralblatt, 1891.
10. Van Gehuchten: Jour. de Neurologie, xiv and xv.

orbital tissues, and as these are dependent on the supply from the fifth nerve, we must assume, I think, a neuritis of this nerve on the affected side. This, moreover, would explain the severe pain experienced by both patients, and the disturbance of sensation in the first. In the presence of polyneuritis involving the fifth and seventh nerves in both, I believe it would be justifiable to consider the optic neuritis in the first as due also to the same cause, infectious in character, rather than to invoke the additional factor of the menstrual disturbance or of the alteration in the blood.

CONCLUSIONS.

1. Optic neuritis is occasionally associated with facial paralysis, either alone or as part of a multiple neuritis; the etiologic factor may be rheumatism, but at times appears to be an infection, the nature of which is as yet undetermined. The optic neuritis is usually of the retrobulbar type, but a decided papillitis may be present, and be followed by more or less marked atrophy. In cases of multiple neuritis, of the cranial nerves, the eyegrounds should be examined for possible optic nerve complication.

2. In facial paralysis, flattening of the face and enophthalmus may appear, and are to be considered as due to a neuritis of the fifth nerve, and not to involvement of possible sensory fibers in the facial nerve.

DISCUSSION.

DR. JOHN E. WEEKS, New York City, said that an interesting feature is the enophthalmus and the approach to facial hemiatrophy. He has recently observed a case in which this was a pronounced feature. There was no affection of the optic nerve, only of the facial nerve. It was a case in which the lesion was primarily an affection of the fifth nerve and, in this case, not only was there a disappearance of the fatty tissue of the face on the right side, but the bony structure was also reduced and the enophthalmus was marked. There was also atrophy of the iris which has not previously been noticed in cases of this kind. The pupil was widely dilated and immobile.

DR. EDWARD SHUMWAY said that, of course, true hemiatrophy is very different, because in such cases the essential condition is an atrophy of the skin itself, which is later followed by atrophy of the subcutaneous tissue and of the bony skeleton. Here the skin is unaffected.

A BACTERIOLOGIC STUDY OF THE BLANK CARTRIDGE.*

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It appears from statistics in THE JOURNAL of the American Medical Association, August 29, 1903, that of 392 cases of tetanus incident to accidents on the previous July 4, 363 followed wounds from the blank cartridge and the toy pistol. In other words, 92 per cent. of the tetanus cases were apparently attributable to wounds from blank cartridges.

Dr. A. I. Ludlow, assistant resident surgeon at the Lakeside Hospital, succeeded in isolating *B. tetani* from the blank cartridge wounds in one out of five fatal cases of tetanus, but cultivated the *B. aerogenes capsulatus* in four. In none of these cases was there emphysema nor emphysematous gangrene of the wounds, which were routinely treated by free incision and packing with iodoform gauze. In one of these which came to autopsy I failed to isolate *B. tetani* from the wound of the hand, but obtained *B. aerogenes capsulatus* from the local lesion and heart's blood. There was no gaseous emphysema of any organ.

These findings led me to investigate several makes of blank cartridges, and the results of these investigations form the basis of the present paper. The infectious agents concerned in these wounds (apart from the contents of the cartridge), may come from the skin and parts of clothing introduced. These latter sources of infection were not considered.

SOURCE OF MATERIAL.

The cartridges used were manufactured by the Peters Cartridge Co., the Winchester Arms Co., and the Union Metallic Cartridge Co., and were bought in the open market at various times and places.

CULTURAL EXPERIMENTS.

(*A*) *Wads.*—In both the cultural and animal experiments the wads were extracted with a sterile instrument, every care being taken to exclude accidental contamination.

The wads were placed in a 1 per cent. glucose bouillon, and incubated under anaërobic conditions (usually in Novy jars) at body temperature, for from 3 to 5 days, when coverslip preparations were studied. Not infrequently slender bacilli with end spores suggestive of *B. tetani* were seen. Nine cultures containing these tetanus-like bacilli were inoculated in fresh hematoma in the thigh of guinea-pigs. All of these animals survived but one, which died at the end of a month without symptoms of tetanus. These tetanus-like bacilli decolorized by Gram and were proved by cultural methods to be identical with a pseudo-tetanus bacillus discovered by Bain in blank cartridges. Many cultures contained a stout bacillus with square ends, apparently encapsulated, and subcultures made on glucose agar showed abundant gas formation. Nine rabbits injected with these gas-forming cultures, and killed ten minutes afterward, showed after from 8 to 20 hours' incubation marked gaseous emphysema, and *B. aerogenes capsulatus* was isolated from them all in pure culture. All efforts to demonstrate the presence of *B. tetani* failed. In a total of 250 wads examined by culture, the *B. aerogenes capsulatus* was demonstrated in sixty-six, or 26.4 per cent., and from sixty-one it was isolated in pure culture. Two of these were worked through all media, but in general the cultural characteristics on glucose agar, milk, and blood serum, together with the morphology, the capsule formation, the positive Gram stain, and the failure to grow aërobically, were deemed sufficient for identification. It is interesting to note that spore formation occurred in old milk and agar cultures, as well as on blood-serum. Some difficulty was experienced in separating *B. aerogenes capsulatus* from the other anaërobic organisms present in wads until Kitasato's method of heating for one hour at 80 degrees C. was adopted. It invariably survived this. That the explosion of cartridges neither kills nor inhibits the growth of *B. aerogenes capsulatus* was demonstrated by shooting the wads into jars containing melted glucose agar, which on incubation gave abundant growth of this organism in four out of five experiments.

The following table gives the proportion in which *B. aerogenes capsulatus* was found in wads of the different makes:

	Wads examined.	B. A. C.	Per cent.
Peters .32 caliber	54	32	50.9
Peters .22 caliber	50	21	.....
U. M. C. .32 caliber	49	7	7.0
U. M. C. .22 caliber	50	0	.....
Winchester .22 caliber	47	6	12.7
	250		

* Read before the Association of American Pathologists and Bacteriologists, New York City, 1904.

(*B*) *Powder.*—Cultures from the powder of 101 cartridges were usually sterile. Neither *B. tetani* nor *B. aerogenes capsulatus* was isolated.

INOCULATION OF ANIMALS.

At the suggestion of Prof. William H. Welch, the rat was used as being probably the animal most susceptible to tetanus.

To give *B. tetani*, if present, the most favorable environment possible, use was made of two procedures, the second one of which has not been employed in similar investigations. The first is inoculation of fresh hematoma, which increases greatly the chances of growth of *B. tetani*. As to the second one, Vaillard and Rouget established that "tetanus spores when free from toxin are innocuous when not accompanied by another bacterium, unless protected from phagocytes." Twelve white rats were inoculated under strict aseptic precautions with wads from the Peters Co. 32 caliber cartridges. In addition, a loop of a pure aërobic culture was added, in six an attenuated *Staphylococcus pyogenes aureus* and in the remaining six *B. coli communis*. The skin was then closed by a stitch and covered with celloidin.

Nine of these rats died in convulsions, the tenth quietly, while the other two survived. The incubation period varied from sixty to seventy hours. The character of the convulsions differed from that usually described for animals. The first symptom was a marked spastic condition of the inoculated leg, which was held in extreme flexion, explainable by the laceration of the extensor muscles. Gradually this spastic state extended to the whole body, so that the animal would retain its distorted shape in any position. In all, there was emprosthotonos, in two associated with pleurothotonos. The forelegs were held closely against the abdomen and the non-inoculated leg in extension. At short, irregular intervals there were definite convulsions, the most typical of which started with several rapid nods of the head, followed in order by clonic spasms of forelegs and hindlegs, passing in a few seconds into a tonic spasm of the whole body. In several, clonic spasms alone appeared. The convulsions lasted from one and a half to three hours, the animals all dying at the end of a spasm. At autopsy no lesions of internal organs were found. Smears from the meninges were negative for leucocytes and bacteria. Bearing in mind previous failures to cultivate *B. tetani* from wounds, it was thought wiser to subinoculate from these animals. Accordingly, the wads, with some necrotic tissue, were removed from six of the rats and inoculated into three guinea-pigs and three rabbits. The guinea-pigs died during the night, but the rabbits developed tetanus in about thirty hours. The character of the convulsions corresponded to the description in text-books.

In smears from the rats and guinea-pigs, a few spore-bearing bacilli morphologically resembling *B. tetani* appeared. These were somewhat more numerous from the rabbits. From one rat, only one such bacillus was seen after an hour's search. In all smears bacilli morphologically identical with *B. aerogenes capsulatus* were recognizable, together with numerous other organisms. Cultures were made from the wounds and wads on glucose bouillon and glucose agar, as well as blood serum. There was marked gas production, but repeated search failed to disclose *B. tetani*. Numerous subcultures, made both with and without Kitasato's method, were likewise negative. *B. aerogenes capsulatus* grew so rapidly and vigorously that it apparently crowded out *B. tetani*. Many anaërobic plates were also unsuccessful as regards *B. tetani*. In explanation of these failures, it may be said that the tetanus-like bacilli were extremely scanty, while *B. aerogenes capsulatus* was relatively abundant; and, further, that several other bacilli were present in the Peters wad, which resisted heating as well, one of these forming colonies much resembling those of *B. tetani*.

However, of five rabbits inoculated with five or six loops of the original cultures, three died in convulsions. Smears and cultures from their wounds were also entirely negative for *B. tetani*, though made as soon as symptoms of tetanus appeared.

The experiment was next tried of adding several crystals of urea to the material inoculated for its antichemotactic effect. In this rabbit the exudate was poor in leucocytes, and tetanus-like bacilli more numerous than in previous experiments, but *B. aerogenes capsulatus* had also increased proportionately and several series of plates were again negative for *B. tetani*.

A second series of inoculations with the Peters wads was next made. Three rats and three guinea-pigs were each inoculated with two wads, together with *Staphylococcus pyogenes mucus*, and several small crystals of urea. One rat and two pigs developed tetanus. As in the previous experiment, tetanus-like bacilli appeared in greater numbers than in the first series, but have not yet been isolated.

Inoculation experiments were also tried with the other brands of cartridges. In the case of the Union Metallic cartridges, the wads from the seven original bouillon cultures which yielded *B. aerogenes capsulatus* were used. One rat died without tetanic symptoms, the others survived. Likewise, thirteen wads of the Winchester cartridges, distributed among three rats and three guinea-pigs, produced no symptoms, and the animals survived the local suppuration produced by the staphylococcus.

Previous work has been done on this subject by Le Garde, Taylor, Wells, and the Boston Health Department, a total of 759 cartridges having been examined, both by cultures and animal inoculations, all with negative results for *B. tetani*. The only report of the finding of *B. tetani* in cartridges is made by R. N. Connolly, bacteriologist to the board of health of Newark, N. J. He bases his diagnosis, apparently, on the morphology and odor of cultures, and no inoculation of animals is reported. With regard to *B. aerogenes capsulatus*, Wells alone describes an obligate anaërobe which corresponds closely to this organism, but says it seemed to have motility, and it is not identified.

My thanks are due to Dr. W. T. Howard, Jr., and to Dr. Roger G. Perkins, for their valuable suggestions.

CONCLUSIONS.

1. *B. aerogenes capsulatus* (Welch) was present in a large proportion of the wads of the three makes of cartridges examined.

2. The wads of the Peters Company, inoculated in rats, guinea-pigs and rabbits, produced characteristic symptoms of tetanus.

3. The powder of the three varieties of cartridges examined was negative for *B. tetani* and *B. aerogenes capsulatus*.

4. My efforts at isolation of *B. tetani* from the wads have so far been unsuccessful.

5. There is abundant evidence, from clinical observations and animal experiments, that the wads of certain blank cartridges contain *B. tetani*. Dr. Welch told me that he considered it diagnostic to see an animal in convulsions.

THE PRESENT STATUS OF SURGICAL INTERVENTION IN RETRODEVIATIONS OF THE UTERUS.*

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The business world has learned the value of frequent inventories of the stock on hand with a view to discarding the old-fashioned and shop-worn articles to make room for the new and up-to-date goods. It would be well if we of the professional world would follow their example, and take more frequent and accurate inventories of our work and be equally ready and anxious to discard methods which have proved useless and harmful.

The time has certainly come for the gynecologic surgeon to take a retrospective view of his work and ask himself honestly and seriously what operations have proven successful and beneficial to women as a whole, and what methods need revising or relegating entirely to the museum of surgical antiquities. No region of the anatomy offers so alluring a field for experimental surgery as the female pelvis, the practical immunity of the pelvic peritoneum from fatal peritonitis making it possible to do a great variety of operations in this region with a low mortality.

The ease with which the round ligaments can be reached by three different routes has given rise to so great a variety of methods of shortening this little cord that even an enumeration of them would be tiresome.

The different operative procedures which rescue the uterus from its safe retreat in the pelvis and suspend or fix it in an unnatural and dangerous position in the abdomen are also numerous. These various methods have naturally led to much operating in this direction, as each operator is bound to prove the advantage of his particular method, which can only be done by a dazzling array of statistics.

With the decline of oöphorectomy as a routine operation in pelvic disturbances it was but natural that some other procedure should take its place, and this time the surgical craze lighted on the uterus, and demanded that it be "hung up" by some one of at least fifty different methods. Several years of active operating in this field have now passed, and the testimony is beginning to come in. The examination and analysis of these reports is the object of this paper.

The following pertinent questions suggest themselves: 1. Are these operations necessary? 2. Are they safe surgical procedures? 3. Have they proven successful in a sufficiently large percentage of cases to warrant their continuance?

The answer to the first question depends largely on a second. What is the normal position of the uterus? Schultze[1] threw the first real light on this subject when he announced that a normal uterus must be mobile. Theilhaber,[2] Winters,[3] Winternitz[4] and many others have followed up his work and established the fact that uncomplicated retrodeviations of the uterus produce no symptoms, and, therefore, need no treatment, surgical or otherwise. Theilhaber distinctly says that by far the greater number of cases of retrodeviations produce no symptoms, and that gynecologists have mistaken the symptoms produced by the complications for the deviation in position. He lodges a severe indictment against the modern gynecologists, saying that many do not understand the new teaching of the clinical significance of retroflexion, and, moreover, many do not wish to know; *"viele nicht kennen und manche auch nicht kennen wollen."* He states that Schultze, Winckel, Landau, Freudenberg, Winters, Krönig and Fenwanger have made similar experiments, and that all have come to the same conclusion as himself, namely, that the majority of retroflexions cause no symptoms.

Winternitz says that retrodeviations are not the cause of the symptoms, and we have, therefore, to consider only the complications, and backs up this statement with the following statistics: In 710 apparently healthy women, 154 had retroflexed uteri; of these 154, 90 (60 per cent.) complained absolutely of no gynecologic symptoms. A closer examination of symptoms in the remaining 40 per cent. revealed the fact that in nearly all cases the symptoms were due to co-existing complications. He says that retrodeviation does not create congestions, and concludes: "To operate on a healthy woman because she has retroflexion is absolutely uncalled for."

In 396 cases, 39 per cent., out of 1,000, taken from the records of my clinic at the Mary Thompson Hospital, the uterus was found in retroposition, 62, 15 per cent. of these cases presented no gynecologic symptoms and were referred to the medical clinic. Without exception, the remaining 334 cases presenting symptoms were recorded as complicated with definite pelvic or abdominal pathologic conditions. These were classified as follows: Myomata, 24, 8 per cent.; ovarian tumor, 17, 6 per cent.; acute pyosalpinx, 8, 3 per cent.; chronic disease of ovaries and oviducts, 116, 35 per cent. In a large percentage of these cases pelvic exudates and extensive adhesions were found. Myometritis, 104, 30 per cent., one-third of this number being complicated with pathologic laceration of the cervix and consequent cellulitis; 8, 3 per cent., were pregnant at time of examination, and there were 6 cases, 2 per cent., of carcinoma uteri. In the remaining 55, 17 per cent., there were other complications, as appendicitis, hernia, nephroptosia, hemorrhoids and recent puerperal cases. There were among the entire number twenty-three extensive lacerations of the perineum, but as these were in every instance in complication with one or more of the conditions mentioned, I have not made separate account of them. These records were made without any reference to the subject under discussion, and many cases presenting no gynecologic symptoms were referred to other clinics without a pelvic examination. Therefore, the cases of retrodeviation presenting no pelvic symptoms, 15 per cent. may be said to have been discovered by accident. I am indebted to my associate on the staff of the Mary Thompson Hospital, Dr. Alice Conklin, for assistance in compiling these statistics.

Olshausen says that uterine catarrh does not come as a result of flexion. He says that it is only a coincident complication. Emil Reis,[5] in a discussion of the subject before the gynecologic society of our city, says that he does not consider retroversion in itself an indication

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* Read before the Chicago Medical Society, 1904.

1. Schultze: Displacements of the Uterus, p. 26.
2. Theilhaber: München. med. Woch., 1902, vol. xlix, p. 1264.
3. Winters: Wiener klin. Therap. Woch., 1904, No. 1.
4. Winternitz: Therap. Monatsh., Berlin, 1903, vol. xvii.
5. Emil Reis: Amer. Jour. of Obst., April, 1904.

for operation, and that in cases of retroversion complaining of pain he looks for the cause elsewhere.

If we accept Schultze's definition of the normal position of the uterus, that of perfect mobility, it would effectually do away with a large number of the operations under consideration, as it certainly could not be claimed that a uterus is in a more normal position fixed in the abdomen than if left a fixed organ in the pelvis, especially as the uterus is essentially a pelvic organ and leaves this region only to perform a physiologic function, to which it again retires unless prevented by some pathologic condition or by the ruthless hand of the surgeon.

The fixation of any viscus compromises its circulatory apparatus, both blood and lymph, interferes with its peristalsis, traumatizes its nerve supply, and with how much more force would this apply to a viscus removed entirely from the anatomic region assigned to it by Nature and forcibly detained permanently in a region remote from its anatomic and physiologic home. The conclusions of Thielhaber and others that uncomplicated retrodeviations are not subjects for surgical intervention rules out, without further discussion, Alexander's and all similar operations, as these can only be performed in uncomplicated cases, and, therefore, in those cases only needing no surgical interference whatever.

We may conclude, therefore: 1. That the normal position of the uterus is one of perfect mobility, and that a non-metritic, freely movable uterus may lie in any position in the pelvis without producing symptoms.

2. That when retrodeviation of the uterus is found in any given case of pelvic disturbance, further investigation will reveal complications which have produced symptoms.

3. It is, therefore, the complications which should be subjected to treatment and not the retrodeviation.

Our first question is, therefore, answered. Surgical procedures for the correction of retrodeviations of the uterus are unnecessary.

In regard to the second question: Are they safe surgical procedures? The testimony against these operations I have found so extensive that it will be impossible to give more than a brief summary. As surgical procedures they are all open to the same criticism; the gravity of the operation is out of all proportion to the results obtained. No surgeon can deny that in opening the abdomen there is always a possibility of infecting the peritoneal cavity no matter how rigid the asepsis or how skillful the operator, leaving behind if not fatal sepsis, pelvic exudates which can not fail to leave the patient worse off than when she came into the hands of the surgeon. The Alexander operation, which is, no doubt, of all this class of operations most extensively performed, practically weakens the abdominal wall at its already weakest points and leaves the patient in constant danger of hernia.

Milander[6] collected 54 cases of pregnancy and labor after ventrofixation; 11 of these cases, or 20 per cent., required severe operative delivery. Of Noble's[7] 76 collected cases, 30 per cent. experienced unusually severe labors. W. A. N. Dorland[8] collected 179 cases, in which 111, or nearly two-thirds of the whole number, experienced some uncommon abnormality in gestation or labor, or in both. In 38 per cent. of these cases disturbances occurred as complications of labor. Four cesarean sections and two Porro operations, which ended fatally, were performed on these cases, and in the remaining, other severe and uncommon operative aid was required. Bidone[9] publishes reports of four cases, out of six pregnancies following ventrofixation, of severe complications as the result of the fixation, and goes so far as to advise an abdominal section for the removal of the fixation two months before term in every case. Gradenwitz[10] cites six cases of complications. In two he re-operated some months after the first operation to relieve fixation. In two he operated for enormous hernias. The other two had very difficult labors, requiring instrumental deliveries.

Guerard of Dusseldorf says that fixation of the uterus is an unnatural procedure, and cites several cases where the fixation was excised before the patient recovered from the unpleasant nervous symptoms. Kreutzmann[11] reports that he made a careful study of the results of these operations during two years, and has come to the conclusion that ventrofixation is unphysiologic, unnatural and dangerous. Montgomery[12] has opened the abdomen during pregnancy to cut the band produced by a fixation before the uterus could develop normally. Dr. Edward Ricketts[13] of Cincinnati says: "After ventral suspension the woman takes her life into her own hands, and if she ever becomes pregnant she ought to agree to surgical intervention."

In a recent paper, Frank W. Lynch[14] of Baltimore collected a large number of cases of serious distocia following ventrofixation and suspension, among them 21 cases of cesarean section and ten ruptures of the uterus. A. Palmer Dudley[15] of New York says: Ventrofixation is a pernicious thing, and should never be done, from the obstetrical standpoint. Byron Robinson[16] reports a case seen in consultation with W. E. Holland, of labor at term following ventrofixation performed three years previously. The patient died of shock three hours following the delivery, and postmortem revealed invagination of uterus due to atrophy of the fundus caused by tension of the fixation bands on the fundus.

Reports of cases of ileus following these operations are just beginning to appear, and it is safe to say that there are others which have not found their way into print. Olshausen,[17] Rheul,[18] Jacobs,[19] and A. L. Smith[20] each report one case. Rufus B. Hall[21] said he had to deal with three cases, and thinks the operation of ventrosuspension has had its day. Montgomery cites a case where a large portion of the intestine slipped below the band of adhesion immediately following the operation, causing strangulation and death. Similar cases, he says, have been reported by Lindfors, Jacobi, Olshausen and others. Fihling's[22] statistics show a mortality of 5 per cent. after all these operations, and that ventral hernia has followed them more frequently than all other operative procedures.

The operation which ranks next to ventrosuspension and fixation in point of dangerous results is undoubt-

6. Milander: Ztschr. f. Gyn. u. Geb., vol. xxxiii, No. 3.
7. Noble: Jour. Amer. Gyn. and Obst., February, 1896.
8. W. A. N. Dorland: Amer. Jour. of Obst., January, 1897.
9. Bidone: Atti della soc. Ital. di ost egin. 1897.
10. Gradenwitz: Centralbl. f. Gyn., Leipsic, 1903, vol. xxvii.
11. Kreutzmann: Centralbl. f. Gyn., Leipsic, 1903, vol. xxvi.
12. Montgomery: Practical Gynecology, p. 494.
13. Ricketts: THE JOURNAL A. M. A., 1903, vol. xli, No. 20.
14. Lynch: Amer. Jour. of Obst. and Gyn., April, 1904.
15. Dudley: THE JOURNAL A. M. A., 1903, vol. xli, No. 20.
16. Robinson: American Medicine, 1903.
17. Ohlshausen: Zeitschr. f. Geb. u. Gyn., vol. xxxvi, No. 1.
18. Ruehl: Samml. klin. Vortrage, N. F. Nos. 185 and 186.
19. Jacobs: Zeitschr. f. Geb. u. Gyn. vol. xxx, p. 550.
20. A. L. Smith: Amer. Jour. Gyn. and Obst., September, 1897.
21. R. B. Hall: Amer. Jour. Obst., 1896, vol. xxxvi.
22. Fihling: Deutsch. med. Woch., 1896, p. 773.

edly vaginal fixation. The fact that both Mackenrodt[23] and Dührssen[24] have abandoned their methods of vaginal fixation on account of disastrous distocia following, ought to be sufficient to condemn this class of operative procedures; however, there are not lacking statistics. Edebohls[25] says that there were 25 per cent. of abortions in Dührssen's cases and 27 per cent. in his own, and that vesical pain and disturbances of micturition follow in a large per cent. of cases. Strassman[26] reports a case of transverse position, prolapse of funis, difficult version, postpartum hemorrhage; rupture at site of cicatrix and death from intraperitoneal hemorrhage; also one case of impossible delivery *per vaginam*, necessitating a Porro operation. Graefe[27] reports a case of transverse presentation; the cervix was above the pelvic brim and directed upward; cesarean section was necessary. Wertheim[28] reports a difficult and dangerous version made necessary by the same condition. Ruehl[29] reports 235 vaginal fixations performed by himself, with twelve subsequent pregnancies. In three version was necessary; in two bloody incision of cicatrix; in one craniotomy in addition, the second child also being lost. Leo von Lingen[30] goes very thoroughly over the subject of vaginal fixation, and says the operation does not evidently appeal to Russian surgeons, as he has failed to find a single case reported by them. He cites the cases I have already given, and, in addition, cases of disaster reported by Veldi, Donhoff, Urban, Kallmorgan, Dielrich, Fuchs, Pape and Rieck. Among these cases were ten cesarean sections, six resulting fatally, and numerous abortions.

The various methods of shortening the round ligaments can not be classed as dangerous operations. The worst that can be said of them is that they are unnecessary, and have proven failures in a large percentage of cases. They will, therefore, be considered under my third and last question: Have these various operative procedures been successful in a sufficiently large percentage of cases to warrant their continuance?

It would seem hardly necessary to discuss the operations of ventrofixation and suspension from this point of view after the overwhelming testimony condemning them from the obstetrical standpoint. However, statistics are not wanting to prove that not only disasters follow in the train of these procedures, but a small percentage of anatomic failures. The greatest objection indeed, which can be raised against them, is that in a large percentage of cases they are a success orthopedically, as the Germans express it.

The percentage of disasters would be less if the percentage of failures in technic was greater. I have, however, performed five vaginal hysterectomies in cases where a ventrosuspension had been performed, and in only one case was the operation complicated by the previous operation. In one case of double pyosalpinx with dense pelvic adhesions, the fundus of the uterus was so firmly adhered to the abdominal wall that I was obliged to free the uterus through the abdomen before finishing the operation *per vaginam*. In the remaining four, the suspensory bands had elongated and thinned, and were only discovered when the fundus was reached in the course of the operation. In one case the band measured five inches. Edebohls[31] found the cervix protruding from the vulva, in one case where he removed the uterus, while the suspensory ligament was still firmly attached to the fundus.

Knorre[32] gives the following interesting statistics: In 4 only, of 24 cases of vaginal fixation, were the orthopedic and functional results good. In 5 the orthopedic results were good, the functional bad. In 4 cases the uterus was retroverted as before the operation, but the patients reported all the symptoms improved. In 11 of the 24 the operation had failed utterly to correct the retrodeviation, and symptomatically the patients remained the same. An interesting report comes from C. W. Oviatt[33] of Oshkosh. He says he has done Noble's operation for retroversion 23 times. In 20 of these there were complications, such as recurring appendicitis and pelvic tumors and diseased appendages, all of which complications were attended to at the time of fixing the uterus. He states that in three uncomplicated cases of retroversion there has been no improvement in the dysmenorrhea, and little or none in the general conditions.

A most significant report comes from the St. Petersburg clinics. T. Dolbert[34] gives the results in 79 cases where ventrofixation was performed, and concludes with the statement that the fine objective results were not paralleled by the subjective, as these returned in more than a third of all the cases, indicating that the neurosis apparently attributable to the displacements is in reality more or less independent of it. Richard C. Wadsworth[35] reports 22 cases of ventral fixation performed at the Massachusetts General Hospital. Only 23 per cent. of these received symptomatic relief. Theilhaber[36] has examined a large number of cases of hysteropexy, and found that the operation does not diminish leucorrhea or hemorrhage.

The many later and newer methods of shortening the round ligament, many of them necessitating the opening of the abdominal cavity, are the severest criticism which can be made on the Alexander operation. Certainly, with the exception of the danger of subsequent hernia, the Alexander offers the least objections of all the numerous methods, and unless it has been found lamentably wanting, there would be no excuse for the innumerable and more objectionable methods. Kleinwächter[37] says that the Alexander operation is illusive, the retroversion recurs, and that the per cent. of hernia following is too large to warrant the operation. I have examined six cases where the uterus was found in retroposition. In one case there was a double hernia. This operation was performed by one of the most skillful operators of our city, and the result can not be blamed to faulty technic.

A great point is made by the advocates of the round ligament operations that no disasters follow in subsequent pregnancies. There is no reason why pregnancy and labor should not proceed normally in these cases, especially in those where the operation has failed to

23. Mackenrodt: Monatschr. f. Geb. u. Gyn., 1895, vol. ii, p. 35.
24. Dührssen: Ges. f. Geb. u. Gyn. zu Berlin, Oct. 25, 1895.
25. Edebohls: Sec. Obst. and Gyn. N. Y. Acad. Med., Feb. 27, 1896.
26. Strassman: Ges. f. Geb. u. Gyn. zu Berlin, Oct. 25, 1895.
27. Graefe: Monatschr. f. Geb. u. Gyn., vol. ii, No. 6.
28. Wertheim: Centralbl. f. Gyn., 1896, No. 2.
29. Ruehl: Centralbl. f. Gyn., 1896, No. 5.
30. v. Lingen: St. Petersburg. med. Woch., 1902, n. F. xix.
31. Edebohls: Sec. Obst. and Gyn. N. Y. Acad. Med., Feb. 27, 1896.
32. Knorre: Centralbl. f. Gyn., No. 51.
33. Oviatt: THE JOURNAL A. M. A., 1904, vol. xlii, No. 16.
34. T. Dolbert: St. Petersburg. med. Woch., vol. xxviii, No. 20, p. 190.
35. Wadsworth: Harvard Med. School Bulletin, No. 11, March, 1904.
36. Theilhaber: Centralbl. f. Gyn., 1902, vol. xxvi.
37. Kleinwachter: Wein. Med. Presse, 1902, vol. xliii.

change the conditions in the pelvis. Andersch[38] reports 37 cases of vaginal shortening of the round ligament with anterior and posterior colporrhaphy. Of these, 29 were examined subsequently after two or three years. He found good results in 15, and recurrences in 14. Halban[39] reports a large number of round ligament shortening by different methods, and says that there were more anatomic cures than cases where subjective symptoms were relieved, as the latter were not due to the retroposition.

From the statistics cited and the testimony presented by the numerous witnesses quoted in my paper, as well as from the results of my own clinical observations, I feel warranted in answering the questions asked in the negative. Surgical procedures in retrodeviations of the uterus are unnecessary. They are unsafe, and have not proven successful in a sufficiently large percentage of cases to warrant their continuance.

BLOODLESS PERINEAL PROSTATECTOMY UNDER LOCAL ANESTHESIA.

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ITHACA, N. Y.

The problem of prostatic hypertrophy, even with the many resources recently introduced and developed, still offers in certain cases many difficulties in its solution. Patients are practically always of advanced age, weakened through pain and loss of sleep for months, and are very unfavorable subjects for any anesthetic or any form of treatment. Catheterization is often difficult and even when easy it is almost impossible to teach the average patient the details of aseptic catheter technic, and to impress him with the importance of its careful observance. Comparatively few patients survive catheter life for many years, and the development of more or less severe cystitis, with its dangers and discomforts, is the rule. Even if the patient gets on with the catheter with comparative comfort, it is not difficult to understand how irksome it must be to depend on the catheter constantly. The Bottini operation has not been without a high death rate, even in the hands of the most experienced and successful of its advocates; it is sometimes followed by incontinence of urine and not unfrequently fails to give relief. Even if its disadvantages were less, the idea of burning a channel through the tissues blindly, with all the possibilities of infiltration of urine, does not appeal to one as a very desirable surgical procedure.

Prostatectomy, when carefully performed, is generally recognized to be the ideal procedure; it gives perfect and permanent relief, and a condition nearer the normal than can be attained in any other way. The dangers of the operation are from the general anesthesia in old and weakened patients and the loss of blood. Before the operation was perfected, as it has been recently, the loss of blood was undoubtedly a factor greatly to be dreaded, but through the introduction of various forms of prostatic tractors it has been possible to greatly reduce the depth of the perineal wound and to make the control of hemorrhage much easier. Of these various forms of tractors devised by Syms, Murphy, Ferguson, Bryson and Young, it has seemed to me that Young's instrument has some advantages. But even with the almost perfect control of hemorrhage the administration of general anesthesia to these greatly weakened, old men is a dangerous matter, and for some months I have been considering the possibility of performing prostatectomy under local anesthesia and devising the means for this purpose. In the weakened and most run-down of my patients I have employed permanent suprapubic drainage of the bladder to save the life of men too much weakened to undergo the more serious operation. This operation can be done in a very few minutes under eucain, and, I believe, is the safest of all procedures. But for men not in absolutely desperate condition I believe that prostatectomy under local anesthesia is an operation which can be performed, as a rule, quite as safely as the Bottini operation and with only the slightest risk as compared with the operation under general anesthesia. Spinal anesthesia has been used by some surgeons in these cases, but even its most enthusiastic advocates are forced to admit that the death rate, reported from many sources, shows it to be unsafe in the hands of the average man. No series of a thousand cases or over without one or more deaths has been reported, while many careful men have lost larger numbers out of a hundred or less spinal anesthesias. General anesthetics, even when carelessly used by untrained men, have not given such a mortality, and this has led nearly all those who adopted spinal anesthesia a few years ago to abandon its routine use. On the other hand, I am not aware that a single death has ever been reported from among the many thousands of cases in which the infiltration of weak solutions of anesthetic drugs has been used. As a local anesthetic, I have been using recently a solution of beta eucain, 1 to 500, with an addition of adrenalin chlorid to make 1 to 120,000, or, in cases where large quantities of fluid are used for infiltration, even weaker solutions. The addition of adrenalin chlorid, by constricting the capillary vessels, arrests even the oozing and makes the operation an almost bloodless one. In these cases I believe that the saving of even this small amount of blood may make the difference between life and death for some of our patients. The eucain is estimated to be five times less poisonous than cocain, and in over one hundred major operations in which I have used it I have never seen symptoms of poisoning from the drug. The use of adrenalin has additional advantages besides saving blood; it prevents the absorption of the anesthetic drug and, by rendering the part bloodless, it also greatly prolongs and adds to the efficiency of the anesthesia; it prevents the congestion and pain after the operation, which is sometimes seen with the use of ordinary Schleich's solution and, from its action on the general circulation, Crile has shown it to be one of our best circulatory stimulants.

In the use of local anesthesia a most thorough knowledge of the anatomy of the parts is desirable. Through the kindness of Prof. Abram T. Kerr, I have had the privilege of examining a number of dissections of the region of the perineum and prostate in the Cornell University Medical College anatomic laboratory, and I wish to acknowledge the value of this privilege and the helpful suggestions from Dr. Kerr in working out the steps of the operation.

DISTRIBUTION OF NERVES.

An accurate knowledge of the location of the nerves supplying the skin and deeper structures of the perineum and a thorough anesthetization of these nerves at the start is the key to the whole situation, in performing a painless prostatectomy under local anesthesia. Examination of a dissection of the perineum shows numer-

38. Andersch: Arch. f. Gyn., Berlin, 1902, vol. lxv, p. 217.
39. Halban: Mon. f. Geb. u. Gyn., January, 1900.

ous nerve branches ramifying in various directions, and at first sight the nerve supply of the perineum seems very complicated. Following these smaller branches back to their main trunks, we see that it is comparatively simple, for the entire nerve supply of this region comes from two main trunks, the pudic nerve, which is formed chiefly from the third cord of the sacral plexus, but also receives communicating branches from the second and fourth sacral nerves, and the long pudendal nerve, which is a branch of the smaller sciatic nerve. References to these nerves in different text-books and atlases of anatomy show differences of opinion as to exact position, but the latest and most accurate authorities are agreed, in the main, as to the location of the nerves of the perineum. In the dissecting room I have found considerable variation in these nerves. But whether the nerves supplying the different parts of the perineum come from two main trunks or from several branches it will be found practically always the case that these nerves take their origin from the main stem or stems, which lie very close to the base of the tuberosity of the ischium. The depth from the surface varies slightly, but it can be estimated quite accurately, within a limit of half an inch, I believe, and this is not too wide a range of error to interfere with thorough anesthetization of the main nerve trunks. The perineal branches of the pudic nerve are by far the most important of these perineal nerves. Superficial fibers run more or less nearly parallel to the transversus perinei muscle. Other small fibers run obliquely forward to the region of the front of the anus, while anterior fibers run to the region of the base of the scrotum and the bulb. The pudendal nerve supplies only the outer region of the perineum and the region far forward, near the base of the scrotum.

METHOD OF ANESTHETIZING MAIN TRUNKS OF PERINEAL NERVES.

After the usual antiseptic preparations, the first step of the local anesthesia operation is the infiltration of the main trunks from which these various nerve branches take their origin. Taking the tuberosity of the ischium as a landmark, the needle of the infiltrating syringe is inserted in the skin about one inch in front and internal to the tuberosity. It is not necessary to infiltrate a large area in this region and the weaker solution of eucain, 1 to 500, with adrenalin, 1 to 120,000, is used to infiltrate the skin and outer layers. Injecting small quantities of fluid before the needle as it is pushed forward, the point of the needle is carried downward and outward toward the front of the base of the tuberosity of the ischium. The superficial tissues are thus thoroughly infiltrated and the needle is pushed forward until it comes in contact with the bone. From 30 to 60 minims of a stronger solution, 0.5 per cent. eucain with adrenalin, are then injected at a depth of from one to two inches, varying with the thickness of fat and muscle in the region of the ischiorecta fossa in front of the tuberosity of the ischium. Experimental injection of a fluid containing coloring matter into muscles or fat and loose cellular tissues, such as is found in the ischiorectal fossa, will demonstrate very conclusively to anyone interested enough to try it how wide an area around the point of the needle is affected by the solution. Thirty minims of the 0.5 per cent. solution is soon so diffused through the tissues that it affects an area from 1½ inches to 2 inches in diameter and is almost certain to thoroughly anesthetize the main trunks of the perineal nerves. In order to make absolutely sure that the patient suffers no pain during the division of the tissues, the skin in the medium line of the perineum or in the direction of whatever line of incision may be considered desirable, is thoroughly infiltrated with the weak solution, 1 to 500 eucain with adrenalin 1 to 120,000. The influence of the adrenalin in preventing absorption of the anesthetic drug and the very weak solution used makes it possible to employ large quantities of solution without any poisonous symptoms. Adrenalin solution also effectually prevents oozing from small blood vessels, and, with a little care in controlling the larger blood vessels, the loss of blood can be reduced to the minimum. I doubt if in my first operation over a tablespoonful of blood was lost throughout the entire operation.

TECHNIC OF OPERATION.

After infiltrating the main nerve trunks and injecting a large quantity of the weak solution in the region of the proposed incision, a sound is introduced into the bladder and partially withdrawn so that the tip remains in the prostatic urethra. The time taken to thoroughly irrigate the urethra and insert the sound gives the eucain solution time to take effect. It is desirable not to begin the incision too soon after infiltration, for it should be remembered that it takes the solution from three to five minutes to thoroughly numb the parts. After the introduction of the sound, the operator should change his operating gloves. He is then ready to make the skin incision.[1]

I am sure that the testimony of my patient, a judge in a neighboring state, will be accepted as trustworthy. In speaking of the operation, he has repeatedly expressed wonder and satisfaction that throughout the steps of the operation, from the time that the needle was introduced, he felt absolutely no pain. The operation proceeded without any delay because of sensitiveness of the parts which were being divided. As the deeper tissues were exposed, the infiltration of the weak solution was carried deeper into the wound. In opening the prostatic urethra and inserting the tractor, slight discomfort was complained of, but this was only transient. The firm traction, which is possible with the use of Young's instrument, absolutely controls hemorrhage from the deeper vessels and they are brought so near to the surface they can be readily secured before they are divided. Exposure of the anterior part of the capsule and enucleation along the sides is carried out in an area that can be thoroughly infiltrated. The deeper enucleation, a matter of but a few minutes, has to be performed in a region which can not be reached satisfactorily with the infiltrating solution. This region of the neck of the bladder and the prostate itself, is supplied by the hypogastric plexus of the sympathetic nerves, and the discomfort of enucleation is not great. In many cases I believe it would be possible to complete the entire operation under local anesthesia. In the cases of extremely nervous or sensitive patients it will be found wise to use a little nitrous oxid gas or primary ether anesthesia. This part of the operation need not consume five minutes' time and is a matter of far less importance in these cases than the use of general anesthesia throughout the entire operation, which can not be performed in much less than one-half hour at the best.

ILLUSTRATIVE CASE.

The following is the history of a case in which the local anesthesia method was employed with great satisfaction to the patient and to me. When the patient's

1. In the further steps of the operation I follow in almost all details the method described by Young in THE JOURNAL A. M. A., Oct. 26, 1903.

condition before the operation is considered, it does not seem too much to say that the use of local anesthesia was the means of saving his life.

Patient.—The patient was an extremely emaciated man, who had been suffering from bladder trouble for over ten years.

History.—For the past three years the difficulty in urination has been very great. During a year previous to the operation, the patient had not been able to retain his urine longer than an hour at any time, and, for the most part, he has been up every hour during the night for months past. He had lost over thirty pounds in weight, and was so weak that he was scarcely able to be about. The pain and constant loss of sleep greatly interfered with his digestion. He had scarcely any appetite; his stomach at times was unable to retain even the most simple food. The prostatic enlargement considerably interfered with movements of the bowels.

Examination.—When first seen, his bladder was distended to the level of the umbilicus, and, on catheterization, 1,250 c.c. of urine was withdrawn. Both the soft and metallic catheter passed readily. The urine had a very foul odor; was pale in color; specific gravity, 1,005. Heavy ring of albumin; no sugar. On microscopic examination, it was found to be filled with pus, numerous triple phosphate crystals, a few red blood cells. No casts were seen. On rectal examination, the prostate was felt as a rounded mass, the size of a medium-sized orange; by pressure it almost closed the rectum and was tender on rectal examination.

Preparatory Treatment.—Three days before the operation, a permanent catheter was fastened in the bladder, but the patient found it so disagreeable that it was discontinued. He was impatient with the idea of palliative treatment by drainage, and arrangements were made for operation. During the time before the operation he was catheterized twice daily, and his bladder was irrigated with boric acid solution. Under this treatment, the blood disappeared from his urine and the amount of pus was greatly reduced. The patient slept somewhat better, although, of course, he was obliged to be up nearly every hour during the night. On the morning of the operation, the bladder was irrigated on the operating table and a small amount of solution was left in the bladder.

Operation.—April 14, 1904. Anesthetic, eucain, 1 to 500; adrenalin, 1 to 120,000. The patient was placed in the lithotomy position, and the parts were anesthetized as above described. An incision was made in the median line, exposing the membranous portion of the urethra. The field of operation was rendered practically bloodless by the use of the adrenalin solution. The few vessels from which there was bleeding were secured without difficulty, and a perfectly dry, clean dissection was possible. A sound was passed into the bladder and on this the urethra was opened. The urethra was secured on either side by stay sutures of heavy linen and was held open while Young's prostatic tractor was inserted into the bladder. This was accomplished without any difficulty. Moderate traction was possible after the instrument was in place without causing discomfort, but firm traction caused considerable pain. The dissection was then continued until the capsule of the prostate was opened. The capsule was dissected off by blunt dissection, well down to the side of both the right and left lobes. A little extra fluid was infiltrated along the sides of the capsule. Up to this time the patient did not complain of pain from the operation itself, but said he suffered more discomfort from his cramped position on the table. It was evident, however, that it would be impossible to make firm traction on the prostate so as to bring it well down to complete the enucleation without causing a good deal of pain, hence primary ether was administered by Dr. Sanders. Only a small amount of ether was used, and the patient took it quietly, without change of the lithotomy position. The wound was covered with wet bichlorid towels and all instruments were taken off before the ether was begun, but the patient did not struggle at all, and this was really an unnecessary precaution. Enucleation of the deeper part of the gland was without special difficulty, but Young's lobe forceps were found of service in grasping it and drawing it down into the wound. The right lobe was enucleated first, then the left lobe was attacked, and finally the middle lobe, which was not very greatly enlarged, was also enucleated. The duration of anesthesia for enucleation of the deeper parts of the gland did not exceed ten minutes, and in another operation, with the experience of this one, it would be perfectly possible to remove the gland in five minutes or less of general anesthesia. A glass and a rubber drainage tube were inserted, the glass tube entering the bladder and the rubber tube being carried into the large cavity left between the rectum and the neck of the bladder. The hemorrhage during enucleation was insignificant; it is doubtful if a tablespoonful of blood was lost. The cavity was packed with iodoform gauze strips, and the perineal opening was partially closed with catgut sutures. While on the carriage and after cleaning up the skin, an infusion needle was inserted beneath the pectoral muscle on the right side and 1,150 c.c. of warm normal saline solution were run in. The fluid was quite readily absorbed. On the operating table, the patient had one-thirtieth of strychnin, with a preliminary dose of morphin, gr. 1/6, and after being put to bed, a second hypodermic injection of one-fortieth of strychnin was administered. The pulse was very good, though it showed some shock, and hence a hypodermic of one-thirtieth of digitalin was given after the strychnin. The pulse soon improved, and was better than before beginning the operation. Urine drained freely from the perineal incision after the operation, but, in spite of this, the patient remained in a rather comatose condition well into the evening, and it was feared that uremia was developing. Infusions of salt solution were used freely and were rapidly absorbed. In all, five infusions were given, 1,000 c.c. being used at each time except the first infusion. The patient's condition steadily improved during the day of the fifteenth. Urine drained profusely from the perineal wound, rapidly saturating pads. The patient retained liquid nourishment from the start without difficulty; no nausea or vomiting at any time. The quantities of nourishment were very rapidly increased and solid food was soon added. In addition to three hearty meals a day, the patient took large quantities of liquid nourishment at intervals between his regular meals. The albumin of not less than two dozen eggs was given him daily. The extra nourishment was given him for over four weeks, and, whereas before the operation the patient had found great difficulty in digesting even simple food, he was soon able to take very hearty meals with great relish and without the slightest trouble from indigestion. The urine drained freely from the wound and with the complete relief from pain, the patient showed very rapid improvement.

Result.—Six weeks after operation he was in excellent general condition, still taking large quantities of nourishment, gaining rapidly in weight and strength, and passing urine through the urethra.*

At the time of writing, over four months after the operation, the patient is apparently in perfect general health; he walks five miles with ease, has gained over 30 pounds, looks and says he feels like a new man. With the exception of a pin-point opening, from which occasionally a few drops of urine escape, sometimes at intervals of several days, the large perineal wound is perfectly healed.

In this case I believe that the operation under local anesthesia made it possible to save a life. Operation had been considered inadvisable by surgeons of repute in a neighboring large city. The use of large quantities of

*As this paper goes to press a second patient is recovering from local anesthesia prostatectomy. He also was in extremely bad general condition; unable to void any urine without a catheter, bladder distended above umbilicus when first seen, greatly reduced in flesh and strength. A number of visiting physicians are ready to testify as to the freedom from suffering of the patient under the local anesthesia. Patient doing well five days after operation.

salt solution subcutaneously to stimulate the action of the kidneys is a matter of great importance, which has been previously emphasized by others. In the further after-treatment, the use of tonics and of large quantities of nourishing food are the main points to be remembered.

In conclusion, I would say that for the surgeon who does not consider his own time and trouble a matter of greater importance than the life which the patient entrusts to his care, the local anesthesia operation offers a means of greatly reducing the dangers of prostatectomy in critical cases.

Special Article.

IMMUNITY.

CHAPTER III.

GENERAL CONSIDERATIONS.

By immunity we understand that phenomenon in which an individual or a whole class of animals exhibits such resistance to an infection as to withstand it, while under the same conditions another individual or another class of animals may yield to it.

Definition.

Immune is from the Latin *immunis*, which meant exempt from a public service, exempt from tribute, or free. Although the word retained this civil meaning for centuries, and still retains it in certain connections, it also had in ancient times a limited application to the protection which an individual might possess against poisons. It is seen, for example, in descriptions of the Psylli, a tribe inhabiting Northern Africa, which possessed a natural immunity to the bites of poisonous snakes. Although the fact of immunity was known in very ancient times, the present significance of the term has developed largely from a better understanding of the nature of infectious diseases and of the resistance of the body against them.

As the definition of immunity suggests, we do not think of immunity to such processes as Bright's disease, arteriosclerosis or the metabolic diseases, but only those which we have learned to recognize as infectious.

Diseases Concerned in Immunity.

Immunity to an infectious disease has no necessary relationship to the degree of its contagiousness, although some of the most striking and certainly the most common examples of immunity follow some of the contagious diseases (as scarlet fever and smallpox). Tetanus, on the other hand, which is absolutely non-contagious, can equally give rise to a high degree of immunity.

No medical fact is more widely known among intelligent people than that an attack of certain of our infectious diseases brings about some kind of change in the patient's tissues which protects him, or renders him immune, against further attacks of the same disease. Inasmuch as he was previously susceptible, the new property is an acquired one, and he is now said to possess an acquired immunity against this disease.

Acquired Immunity.

It is also well known that many diseases which attack man can not be inoculated into the lower animals, and biologists are familiar with many other examples of immunity which are confined to a species. The lower animals apparently can not be infected with scarlet fever or measles, nor man with chicken cholera. The negro is less susceptible to yellow fever than the white man. The resistance which these examples illustrate has occurred naturally, not through having the disease; it is a natural immunity.

Natural Immunity.

Natural immunity is for the most part an inherited condition; this certainly is the case where a whole class of animals is involved. Similarly, the susceptibility which is peculiar to a species must be hereditary. It is often said of some diseases that they run in families; e. g., carcinoma, gout, insanity. This appears to be just as true of some infectious diseases, the most noteworthy example of which is probably tuberculosis. In contrast to this inherited susceptibility is an inherited immunity, which may also run in families. It is not so easy to adduce examples of this. We are in the habit of thinking of the individual who can resist all infections as representing a standard. He, however, is above the average in resistance, and the average is our proper standard for estimating the resistance of a species or race of animals. It is undoubtedly true that some families possess an unusual resistance to tuberculosis. Furthermore, experimental work with animals has proved that, within limits, an immunity to certain infections (e. g., tetanus) acquired by a female may be transmitted to her offspring. Even in a given family, however, there are often marked variations in susceptibility and resistance. One child may contract scarlet fever, while his brother, living under exactly the same conditions, may escape it. There is, moreover, much reason to believe that the same individual varies greatly in his resistance at different times and under different conditions. Hence, the personal equation, as shown by individual immunity or individual susceptibility, is of no small consequence.

Family Susceptibility and Immunity.

The facts mentioned were familiar long before anything was known regarding the principles on which they depend. Subsequent to the discovery of some of these principles (to be considered later), it became convenient and necessary to recognize other special types of immunity, although any type which can be conceived must still find a place under either natural or acquired immunity.

It seems certain that such diseases as typhoid and cholera can occur only when the microbes themselves are present in characteristic localities. Although these diseases are accompanied by pronounced toxic symptoms, the poisonous substances seem to be integrally associated with the bacterial protoplasm and not secreted in a soluble or diffusible form. Observations point to the belief that their toxins are liberated only after the bacteria are killed and dissolved. Hence cholera, typhoid and many other diseases which resemble them in this respect, are in a peculiar sense bacterial diseases. On the other hand, the symptoms which are so characteristic of tetanus are produced not by contact of the bacteria with the nervous system, but through the poison secreted by the tetanus bacilli in the wound where they reside. This poison, or toxin, goes into solution and is carried from the wound to the nervous system. Therefore, although tetanus is a bacterial disease, it is at the same time and in a peculiar sense a toxic disease. Bacteria which conduct themselves like the organisms of typhoid and cholera are said to possess intracellular toxins. Now experiments show that the serum of an animal which has an immunity against typhoid or cholera infection is able to kill the respective bacterium, but apparently is not able to neutralize the toxic substance in the bacterium. Hence, immunity to such diseases is spoken of as antibacterial.

Antibacterial and Antitoxic Immunity.

On the other hand, the serum of an animal which is immune to diphtheria or tetanus, diseases caused by the soluble, extracellular microbic toxins, will neutralize these toxins without having any necessarily injurious action on the bacteria themselves. That is to say, the immunity is antitoxic. Experience has shown that this distinction between antibacterial and antitoxic immunity is an important one, and the differentiation seems to be a very sharp one. As a good illustration of its importance, we may say that no one has ever obtained a successful antitoxin for typhoid by the immunization of animals, the resultant serum being antibacterial rather than antitoxic. It is obvious that natural immunity may be in one case antibacterial and in another antitoxic; and the same is true of acquired immunity.

Immunity which is acquired as a result of an infection depends on a specific reaction on the part of the tissue cells in response to the chemical injury produced by the bacteria or their toxins. In view of the active part played by the body in establishing this new resistance, the condition is referred to as an active immunity. In the preparation of our various antitoxic and antibacterial sera for commercial purposes, a condition of active immunity is deliberately produced in the animals (the horse, for example,) by the injection of the toxins or of the bacteria.

Active Immunity.

Contrariwise, the resistance which is established in an individual through the injection of an immune serum (such as diphtheria antitoxin) is a passive immunity, since it depends on the introduction of ready-made immunizing substances rather than on their production through an active process on the part of the one injected. Active and passive immunity, then, are varieties of acquired immunity. Depending on the disease which caused the immunity, or on the character of the serum injected, they may be either antibacterial or antitoxic.

Passive Immunity.

Any one of the types mentioned may be either relative or absolute; synonyms are partial and complete. If absolute, infection is impossible. If only relative, different conditions may be made to prevail which would render infection possible; for example, a large number of bacteria will often cause an infection where a smaller number fails to do so. There may also be a temporary decrease in one's resistance through overwork, hunger or exposure. Immunity is usually relative.

Relative and Absolute Immunity.

By proper combinations of the terms which have been enumerated, one may describe somewhat accurately the different forms of immunity. Thus, a child which has received a prophylactic injection of diphtheria antitoxin is in a state of acquired passive antitoxic immunity to diphtheria. If immunity to typhoid has developed as a result of the disease, the condition is that of an acquired active antibacterial immunity, etc. Accordingly, although the terms may be somewhat confusing, it is seen that they are in no sense contradictory.

Classification of Types.

In tabular form, the different types may be placed as follows:

IMMUNITY.	Natural. The inherited immunity of species and varieties of animals.	Antibacterial or Antitoxic.
	Inherited family or individual immunity.	
	Acquired.	
	Active.	
	Passive.	

In many of these conditions proper biologic experiments will demonstrate the presence of the antibacterial or antitoxic substance in the serum of the animal which possesses the immunity. The technic of such experiments will be illustrated later.

There is another kind of acquired resistance which properly may be mentioned here. It is a well-known fact that one may gradually accustom himself to enormous doses of morphin, arsenic, alcohol and some other drugs. *A priori*, it would seem that this condition of resistance should be analogous to that which is present in antitoxic immunity. But, on the contrary, the serum of a morphin or alcohol habitué has no power of neutralizing the effects of morphin or alcohol. The conditions on which this resistance depends are not understood.

Drug Habituation.

CHAPTER IV.

HISTORY AND DEVELOPMENT.

The conception of the nature of immunity which was current at one period or another of history had some relationship to the conception of the etiology of diseases at those times. It will be remembered that at one time diseases were supposed to be imposed by an angry deity, and to avert them various mysticisms were resorted to, such as the utterance of incantations and the wearing of talismans. On the other hand, a more logical attempt to explain the natural immunity of the Psylli against snake poison was made by Pliny, who suggested that it might be due to their habit of drinking water from wells in which poisonous snakes dwelt. This is not unlike our present conception of active immunization.

Early Times and Practices.

Von Behring quotes literature to show that among some primitive races of to-day, artificial immunization is carried on; a Mozambique tribe is said to inoculate against snake poison by rubbing into a small cutaneous incision a paste which contains venom. Probably non-fatal quantities are introduced in this way, resulting in the formation of venom antitoxin, a method comparable to that used in the production of diphtheria antitoxin.

A type of immunity which we call drug habituation early became known. We learn that Mithridates by taking gradually increasing doses of poisons established in himself resistance of this sort. It is stated also that he fed ducks with poisons and then proposed to use their blood as an antidote (serumtherapy). The importance of antidotes in the minds of the ancients may be appreciated from the fact that epidemic diseases, such as plague, cholera and smallpox, were at one time considered as due to unknown poisons, which might be comparable in nature to some known poisons, as aconite. Mercury for syphilis, quinin for malaria, and salicylic acid for rheumatism would certainly have fallen into the category of antidotes, and mercury may have been so considered.

A historic illustration of the treatment of disease on an etiologic basis is found in a theory which was prevalent in the seventeenth century, according to which diseases were either acid or basic in character, and hence should be treated, the one with an alkali, the other with an acid. Sylvius considered plague to be of acid nature and administered alkalies, while Etmüller took the opposite view.

Manifestly, rational treatment and prophylaxis of the infectious diseases could not be undertaken until their etiology was correctly understood. Yet here, as has so often happened in medicine, empiricism preceded rationalism. For example, protective inoculation did not become a principle until the time of Pasteur, yet it had been practiced against smallpox for centuries, and the method put on its present basis by Jenner long before there was a clear idea as to the *modus operandi* of the protection which resulted.

(To be continued.)

Football.—Prof. Burt G. Wilder, of Cornell University, who opposes intercollegiate football games and favors intracollegiate football, said. Some day the national sense of humor will vie with mortification over the record that our universities were once known most widely through the prowess and mishaps of a few score football champions. For the most part those men were intended by Nature and environment for simple and useful lives as students and citizens. They were endowed with the strength and activity that daily moderate exercise would maintain as the most perfect basis for mental work. Yet they were persuaded that the honor of the university called on them to be excused from constant attendance and regular duties as if in the public service; fed at double rates; trained to the verge of "staleness"; portrayed more often than college presidents; wagered on like race horses; bathed and rubbed like cripples; attended by surgeons like duelists; nay, if experts are to be credited, occasionally disabled by methods as unfair and cowardly as those of the savage and the assassin. The university that shall first restrict football to its own members and grounds and abolish gate receipts, may lose some income and a few nominal students; but posterity will award it honor higher than for any other corporate achievement.—*Am. Medicine.*

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REGENERATION OF PERIPHERAL NERVES.

It is not so very long since it was generally believed that the series of events that occurred in a peripheral nerve after it had been divided were fairly well understood and established. It was generally taught that the axis cylinder in the peripheral part rapidly underwent degeneration throughout its entire length, while the peripheral end, because it was still connected with the nerve cells of which it formed a part, degenerated but little, as far as the nearest node of Ranvier. Regeneration, it was believed, must come entirely from the central portion, for here alone was the axis cylinder still in continuity with its cell. All of the new-formed axis cylinders in the peripheral portion of the injured nerve were believed to have been entirely derived from the central portion, which pushed its way down along the old nerve sheaths that were left after the degenerated peripheral fibers had been absorbed. Continued investigations have failed to establish the accuracy of this comparatively simple conception, and have tended rather to confuse the picture. Hence an exhaustive review of the literature on this important subject, recently published by Schütte,[1] and the conclusions reached therefrom, are of considerable interest.

It seems to be fully established, in the first place, that the peripheral segment of a divided nerve degenerates completely, and that healing of the nerve by primary union of the cut ends does not occur, no matter how clean cut the incision and how perfect the apposition. The physiologic or functional degeneration precedes the appearance of demonstrable anatomic degeneration. Both sensory and motor fibers degenerate; the sensory fibers probably the more rapidly. The dogma that the degeneration of the axis cylinders in the central end is limited by the nearest node of Ranvier is evidently unwarranted, for degeneration as far as from the third to the sixth nodes is usual, and not infrequently single fibers degenerate for long distances toward the center, although surrounded by other intact fibers. If the nerve end becomes infected the ascending degeneration may be very extensive. The degeneration first begins in the axis-cylinder fibers, the myelin sheath degenerating secondarily, and the process extends from the point of division toward the periphery, but regeneration begins long before the completion of the retrogressive changes. One of the most important points still seems unsettled, namely: Why does the degeneration occur, and why so much more in the peripheral than in the central portion? The dependence of the degeneration on separation from a trophic center, an idea formerly held almost universally, seems now far from established; Schütte, indeed, regards the evidence, on the whole, as opposed to this theory, and pointing rather toward the trauma as the sole cause of the degeneration. Not all will agree with this conclusion, however. It certainly does not satisfactorily explain the relative escape of the central portion.

The following experiment may be cited, on the other hand, as weighty evidence against the trophic-center idea: If a nerve is divided and the ends separated completely, regeneration of the peripheral end will eventually occur, independently of connection with the ganglion cells of the cord; now, if this regenerated peripheral portion be divided, complete degeneration of the lower segment will again occur, but in the upper segment the degeneration will be limited to the few lowest segments, exactly as in a nerve that is still in contact with the cord. An explanation for this process is still wanting, but it strongly recalls similar phenomena seen in regeneration in some of the lower forms of animal life, such as the hydroidea, and attributed to a phenomenon of "polarization."

Also the conception that regeneration of peripheral nerves is accomplished by an outgrowth of the axis cylinder of the central end, which follows the old nerve sheath as a path, has met with many opponents who seem to have succeeded in establishing the theory that nerve fibrils can regenerate in sections of nerves entirely separated from the ganglion cells. These new fibers are developed from the cells of the sheath of Schwann in numerous separate segments which later fuse to form the fibers. In young animals, at least, these fibers may become medullated to some extent, and, perhaps, capable of transmitting stimuli along their course, but it is possible that they may later spontaneously degenerate again. In other words, true nerve fibers can be developed from the cells of the nerve sheath, independently of connection with the ganglion cells. On the other hand, it has been shown that this regeneration is much slower, is incomplete, and perhaps is not permanent, as contrasted with the more nearly perfect regeneration possible when peripheral and central ends are well united. How the connection of central and peripheral ends modifies the rate and results of regeneration is still unknown, and the idea of a "trophic center" is not easily downed. Of course, for establishment of functional results, such union is absolutely essential, but it may well be that time intervening between the traumatic division of a nerve and its reunion by operative measures is not entirely lost, for in the separated peripheral portion nerve fibers may be forming ready to develop rapidly to functional serviceability when the gap in the nerve is finally bridged. It is

1. Cent. f. allgemeine Pathologie, 1904, vol. xv, p. 917.

also apparent that regeneration will be more nearly complete the sooner and more accurately the divided ends are united.

THE RED-LIGHT TREATMENT OF SMALLPOX.

In 1893 Finsen came forward with the proposition to place smallpox patients in rooms from which the chemical rays of light are rigidly excluded by means of red glass, red curtains, etc. He claimed that if the patient during the appearance and the growth of the exanthem is protected from the chemical rays, then the exanthem will be less pronounced than otherwise and suppuration with its attendant dangers largely avoided. This is Finsen's red-light treatment of smallpox. Without entering into any discussion of the physics of light involved in the method, let it suffice to say that Finsen was led to advocate the treatment from the following considerations: Chemical rays are irritating to normal skin, and hence, in all probability, they serve to increase the inflammatory processes set up in the skin in the course of variola. He presented considerable evidence from various sources that tends strongly to show that, under certain conditions, the red-light treatment, conscientiously carried out, actually does abort pustulation, and lessens or prevents secondary fever and scarring.[1]

In spite of the interest that this mode of treatment naturally awakened, in reality, so far, it has received only superficial consideration outside the Scandinavian countries, with the possible exception of one or two observers in France. Especially is this true of our own country and of England, notwithstanding that it is from these countries that what purports to be the most destructive criticisms of the treatment have come. It is in order to call attention to the lack in this country of adequate, unprejudiced trial of the red-light treatment, under rigidly controlled conditions, that we here discuss the subject.

Our therapeutic helplessness in smallpox does not warrant that promising departures along new lines be abandoned without decisive investigation. Schamberg[2] condemns the method unreservedly after its failure in two cases, which Finsen[3] subsequently pointed out were put under red light too late in the course of the disease, namely, after the fifth day. Schamberg's cases were placed in red light on the seventh day. Furthermore, there is no evidence in Schamberg's article that the chemical rays were completely and continuously shut out; at all events, we are not told by what means, if any, their exclusion was demonstrated definitely. Years ago Finsen insisted that "smallpox patients must be protected from the chemical rays with as much care as the photographer uses for his plates and paper." In his answer to Finsen, Schamberg[4] endeavors to show that because variola in the negro leads to just as severe pitting as in white persons in spite of the pigmentation, which in the negro would offer a complete barrier against the chemical rays, these rays can have nothing to do with pustulation.

It does not necessarily follow, however, that because the pigment normally protects against the chemical rays it must do so also in variola; for all we know, the pigment-carrying cells may be destroyed and displaced as the vesicles develop. Better to try the red light conscientiously in suitable cases of variola in black as well as in white before reaching definitive conclusions in roundabout ways beset with pitfalls. Still more recently, Schamberg[5] again discusses the red light, the passing of which he now regards as settled because of the unfavorable results obtained by Nelson A. Brayton,[6] and Ricketts and Byles.[7] But the reports of these men appear to suffer from the same inherent defects as already noted in Schamberg's. Brayton's report is silent as to the period in the disease when the patients were placed in red light, silent as to how long the treatment was continued, silent, too, as to the methods by which he demonstrated that the chemical rays were wholly and continuously excluded. How, then, can any one know from this article that the red-light treatment was given adequate trial? Ricketts and Byles' thirteen cases, as pointed out by Finsen[8] himself, were placed in red light on or after the fifth day, except one, which was so treated from the fourth day. Finsen's original statement in regard to this important point reads: "When the patients come under treatment early enough, before the fourth or fifth day of the disease, suppuration of the vesicles, even in unvaccinated persons and in confluent smallpox, will be avoided with one exception out of about 70." Further, "should the patient come under treatment after the fifth day of the disease it is uncertain whether the suppuration can be avoided; sometimes this is the case, sometimes not." It would seem that the experiments of Schamberg, of Brayton, and of Ricketts and Byles can not be given much weight in deciding on the merits of Finsen's red-light treatment of smallpox because these observers failed to recognize the limitations, and to show that they fufilled all the requirements established by Finsen, and insisted on by him. The conditions to be fulfilled are simple enough: 1. The patient must come under treatment early—before the fourth or fifth day—and must remain, without interruption, under treatment until the vesicles have dried up. 2. The chemical rays of light must be shut out absolutely, photographic plates or sensitized paper being used for test; if these show influence of white light, the technic is imperfect somewhere. In view of the simplicity of the conditions and of the general prevalence of smallpox in our large cities, it is hoped that

1. Finsen's Phototherapy, Sequeira's English translation, 1901, contains the details.
2. THE JOURNAL, May 2, 1903.
3. Ibid., Nov. 14, 1903.
4. Ibid., Nov. 21, 1903.
5. Ibid., Nov. 26, 1904.
6. Ibid., July 25, 1904.
7. The Lancet, July 30, 1904.
8. Ibid., Nov. 5, 1904.

the red light may soon be given adequate trial on a large scale, so that its real merits may be determined more definitely. Finally, it may be well to emphasize again that it is not now here claimed that red light prevents suppuration even when used as outlined by Finsen, but it is claimed that, so far, in this country, the treatment has not received such trial that we are in position to say that Finsen was wholly deceived as to its value under the restrictions by him outlined. In justice to smallpox patients, new investigations should be instituted.

ANEMIA IN PORTO RICO.

In February, 1904, the legislative assembly of Porto Rico authorized the governor to take steps to encourage the study and cure of "tropical anemia" in Porto Rico. For this commendable purpose $5,000 was appropriated. A commission was appointed, composed of Bailey K. Ashford, captain, assistant suregon, U. S. Army, who really was the first to show that the tropical anemia in this island is due to hookworm; W. W. King, passed assistant surgeon, U. S. Public Health and Marine-Hospital Service; and Dr. P. G. Igaravidez, health officer of Bayamon, Porto Rico. A tent hospital was erected at Bayamon near San Juan in which treatment was begun in March last year and continued until April 30, when no less than 951 cases of anemia had been treated; in 947 the uncinaria was present as practically the sole cause of the anemia. The hospital was now moved to Utuado, and no sooner were the tents pitched than patients began to arrive in large numbers. At times, from 300 to 600 patients presented themselves in one day. By August 15, 4,543 cases of uncinariasis had been treated. In this way the commission gathered the material necessary for study at the same time that the treatment instituted by its success drove out the well-nigh universal skepticism in Porto Rico regarding the curability of the disease. Such, in brief, were the operations of this commission whose report was published Dec. 1, 1904.[1] Certainly the commission merits the highest commendation for its arduous labors and its prompt and valuable service. The value of its work to the people of Porto Rico can not be estimated. Hundreds and thousands of human lives have been made happier and longer as the direct result of an expenditure of $5,000!

The main results of the investigations of the commission which have been anticipated somewhat are that the anemia of Porto Rico, which affects about 90 per cent. of the rural population of the island, and is marked by profound anemia and chronic invalidism, is due to uncinariasis, and that the disease in the great majority of the cases is curable and preventable. In the treatment the essential feature, of course, is the expulsion of the worm. Three drugs merit serious mention: thymol, male fern, betanaphthol. We can not here enter on details of the treatment. Thymol was used with satisfactory results. Betanaphthol, introduced in the treatment of uncinariasis by Bentley,[1] was used toward the end of the work. Except for causing some dizziness, the commission regards this drug, which is only one-tenth the cost of thymol, as an ideal vermifuge in this disease, destined to eclipse thymol and male fern. For the many valuable observations on various features of the disease, such as the mazamorra or uncinarial dermatitis caused most likely by the penetration of the skin by the larvæ in infected soil and water, the diagnosis by examination of the feces, the remarkable eosinophilia, the suggestions in the line of prevention, etc., reference must be made to the full report which will always constitute a landmark in the history of uncinariasis. It is hoped that this report will prove stimulating to the study and cure of anemia in the lower classes in other tropical countries. The day of blind reliance on iron, quinin and tonics in general in the treatment of anemic conditions in tropical countries is past, never to return. Treatment must be directed against the cause and, in the case of uncinariasis, the specific cause is not difficult to find and to remove. Undoubtedly, Porto Rico will continue the humanitarian work, so well commenced, to the end that another preventable disease will be prevented in fact as well as in theory.

1. Report of the Commission for the Study and Treatment of Anemia in Porto Rico, San Juan, P. R.

THE LYMPHOCYTES IN TUBERCULOUS INFECTIONS.

The relation which exists between certain forms of bacterial infection and the increase in certain varieties of leucocytes in the blood has been known for many years, and has been taken advantage of in diagnosis. We know that septic infection is generally associated with a polynuclear leucocytosis, that in typhoid fever the mononuclear leucocytes are relatively increased, and that infection with intestinal parasites often causes eosinophilia. In recent years, the use of cytodiagnosis has brought out the fact that tuberculous effusions usually show an excess of lymphocytes, and has suggested that the tubercle bacillus elaborates a poison which is positively chemotactic to lymphocytes.

This suggestion is not a new one; in fact, a number of observers have claimed a lymphocytosis following the use of tuberculin. These observations are not numerous, and recently Fauconnet[2] has deemed the subject worthy of more extended investigation. He states that in the early stages of tuberculosis the blood is unchanged, and that his main aim in his experiments was to find out whether a sudden flooding of the body with tuberculous toxins would lead to recognizable changes in the blood. He first took cases in the early stages of tuberculosis and injected them with tuberculin, examining the blood before and after the injection. He found that in all these cases there was an immediate increase

1. Indian Medical Gazette, 1904, vol. xxix, No. 4.
2. Deutsches Archiv für klin. Medizin, vol. lxxxii, Nos. 1 and 2.

in the leucocytes, the average increase being 2,000 leucocytes per cubic millimeter. It was the polynuclears which were increased, however, and not the lymphocytes. After a few days the leucocytes were slightly decreased, but the relative increase in polynuclears persisted. The examination of the blood and also of the exudate, in several cases of serous-membrane tuberculosis with effusion, showed that while the lymphocytes predominated in the effusion their number in the blood was not increased. The experimental injection of healthy guinea-pigs with tuberculin gave less positive results. In all cases there was a leucocytosis, but in some the polynuclears were increased, while in others the lymphocytes were the cells affected. In guinea-pigs, which had been injected for a long time with tuberculin, there was a decided increase in the lymphocytes. Fauconnet does not regard this as a chemotactic phenomenon, though he does not give any adequate reason for this standpoint. The effect of introducing capillary tubes beneath the skin of guinea-pigs after filling the tubes with tuberculin differed according to the strength of the tuberculin. Strong tuberculin led to destruction of leucocytes, but when these were preserved it was always the polynuclears which wandered into the tubes. The same results followed the introduction of tuberculin directly into the peritoneal cavity, the cells found in the exudate were polynuclears.

Fauconnet concludes as a result of these experiments and clinical observations that the tubercle bacillus, like most other bacteria, possesses chemotactic power only over the polynuclear leucocytes, so that, as far as the blood is concerned, we can expect no changes which will be of diagnostic value in the early stages. So far as the presence of cells of the lymphocyte type in tubercular effusions and in tubercles themselves is concerned, Fauconnet thinks that their presence is not explained by chemotaxis. In the case of the effusions into serous cavities, he thinks that the close relation of the serous cavities to the lymphatic system may explain the excess of lymphocytes. Fauconnet's work is mainly of negative value, as it shows that little is to be expected from the blood examination in the early stages of tuberculosis; it upholds, however, our present views regarding the character of the cells in tubercular exudates.

TRUTH AND POETRY CONCERNING URIC ACID.

V.

Mares' hypothesis assumed that all uric acid excreted comes from the nucleins of the cells of the body; it denied any direct origin from the nucleins of the food.

The incorrectness of this assumption has since been shown by many researches. Thus it was soon demonstrated that foods rich in nuclein or in xanthin bases exercise a powerful effect on the excretion of uric acid (Horbaczewski, Richter, Weintraud, Lütje). A difference, however, in the action of the nucleins of individual foods is discernible. Umber showed that while the feeding of thymus and liver increases uric-acid excretion, the feeding of brain and kidney, which are almost equally rich in nucleins, does not increase it, at any rate to the same extent; the mode of chemical union in the various nucleinic acids, therefore, Umber thought, can be of great importance. Similar experiments were made by P. Mayer, Jakob and Bergell, Rosenfeld and Orgler, Carlyle Pope and Minkowski. It must be considered as established that nuclein in the food can increase uric-acid excretion.

Despite these researches, the reason for increased uric-acid excretion after the eating of meat still remained obscure, for meat, Kossel showed, contains but little nuclein; further, it had already been proved that there is no direct relation between albumin intake and uric-acid excretion. That meat eating does significantly increase the uric-acid output had been repeatedly demonstrated (Strauss, Smith and Jerome, Zagari and Pace, Sivén). The explanation came with the discovery by Kossel of the existence of an abundance of free xanthin bases in meat, and with the bringing of the proof by Burian and Schur, that of the 0.06 per cent. of purin bodies present in meat, no less than 0.045 per cent. are in a free state. If free xanthin bases can give rise to uric acid, as would seem probable, since the synthetic studies of Emil Fischer have shown their near relations to one another chemically, the increased uric-acid excretion after meat eating is easily accounted for.

And yet, the older experiments, it will be recalled, indicated that the feeding of free xanthin bases alone does not increase uric-acid excretion. It was time that that observation should be subjected again to an experimental test, and this work was undertaken by Minkowski.[1] His studies showed that the feeding of xanthin bases, especially hypoxanthin, leads in man to marked increase of uric-acid excretion. The earlier experiments, which had been negative, had been made chiefly on dogs; Minkowski discovered that in the dog the xanthin bases fed are excreted not as uric acid, but as allantoin; this explains how the idea had arisen that the feeding of xanthin bases does not increase uric-acid excretion. This proof of the possibility in man of a direct transformation of the xanthin bases of the food into uric acid independently of any intermediation of the leucocytes of the body, marks the next important step forward in the progress of knowledge in connection with our subject.

It had by now become perfectly clear that the uric acid excreted can be derived from at least two sources—first from the nucleins of the cells of the body itself, and second, from the nucleins and xanthin bases of the ingested food. From this time on, it became customary

1. Minkowski, O.: Ueber den Einfluss der Leber-Exstirpation auf den Stoffwechsel, Arch. f. exper. Path. u. Pharmak., vol. xxi, 1886, p. 89; Untersuchung zur Physiologie und Pathologie der Harnsäure bei Säugetieren, ibid., vol. xli, 1898, p. 375.

to speak of the excretion of "purin bodies" (xanthin bases plus uric acid) in the urine, rather than simply of the excretion of uric acid. Burian and Schur[2] refer to that portion derived from the metabolism of the body cells as "endogenous" urinary purin bodies, and to that portion derived from the nuclein and xanthin bases of the food as "exogenous" urinary purin bodies.

An interesting attempt was made by Burian and Schur to determine more exactly the actual relative amounts of endogenous and exogenous purin bodies. They believed that by estimating the purin content of the urine of well-fed human beings, whose diet was kept free from purin bodies, that they had determined the amount of endogenous purin bodies excreted. Their findings indicated individual differences for this value. The increase in the amount of purin bodies excreted when nucleins or xanthin bases are fed to the same individual indicates, they thought, the amount of exogenous purin bodies excreted. The latter amount, they believed, is dependent wholly on the quantity and quality of purin bodies fed. They asserted that 50 per cent. of the hypoxanthin ingested as food (either free hypoxanthin or that combined in nuclein) is given out in the form of purin bodies in the urine, while only 25 per cent. of the adenin ingested is excreted as urinary purin.

Extremely valuable as have been the contributions of Burian and Schur to the physiology and pathology of uric-acid excretion, they have, it appears, gone too far in their later assumptions. The matter is not so simple and diagrammatic as their work would lead us to believe. Some of the objections to their views have been well formulated by O. Löwi.[3] He points out that it is really impossible by our present methods to determine accurately how much of the purin bodies excreted is endogenous and how much is exogenous in origin.

In all probability, the endogenous purin bodies can be derived from several different sources. Thus under physiologic conditions it seems probable that in mammals they are derived chiefly from the nuclein metabolism of all the body cells and, principally, of those body cells which undergo most active chemical changes, namely, the cells of the secreting glands and of the muscles. A further possible source of endogenous purin bodies, even in mammals, is by way of direct synthesis. So much attention had thus far been directed to the origin of uric acid by the oxidation of complex compounds that but little consideration had been given to the possibility of its formation in the organism by the union of simpler bodies. We shall turn in our next article to a consideration of the possibility of such a synthetic origin of uric acid.

2. Burian, R., and Schur, H.: Ueber die Stellung der Purinkörper im menschlichen Stoffwechsel, Pflüger's Archiv, vol. lxxx, 1900, p. 241, and vol. lxxxi, 1901, p. 239.

3. Löwi, O.: Beiträge zur Kenntniss des Nukleinstoffwechsels, Arch. f. exper. Path. u. Pharmak., vol. xliv, 1901, p. 1, and vol. xlv, 1901, p. 157.

A NOTABLE ACHIEVEMENT.

A news item in THE JOURNAL, Feb. 4, 1905, deserves emphasis. Every reader of THE JOURNAL, every member of a local or state board of health, and, indeed, every American citizen should fully appreciate the fact that the Kentucky State Board of Health has succeeded in requiring all the railroads of the state to regularly disinfect all passenger cars. When the proposal first was made, the railroad officials smiled, but after they understood the powers of the State Board of Health they took the matter soberly and ended by agreeing to enforce the regulations regarding car sanitation and sterilization, that were published in detail in a former issue. This reform applies not only to cars used in short runs and in local service, but also to the sleeping, dining, buffet and parlor cars on the through trains which merely traverse Kentucky soil. If persistence and persuasion, supported by some show of authority, can accomplish this in Kentucky, what prevents other states from following this admirable example. Experiment and experience have shown that railroad cars frequently act as carriers of infection. Kentucky has shown how to meet this danger to the health of the community, and other states can not afford to be too far behind.

FIGHTING MEDICAL FRAUDS.

We have published in our news columns, from time to time, accounts of the measures adopted by our German confrères to fight medical frauds. It would be well if we would follow their example, and through our medical organizations institute more active proceedings against all sorts of irregular practitioners. Whether we can get the full co-operation of the public press in the work, as seems to be the case in Munich and in other German cities, may seem at first a little doubtful. But we believe that if the same methods were employed here they would be equally effective. It only requires a certain amount of effort on the part of the medical profession to persuade all respectable newspapers to exclude fake and fraudulent medical advertisements. So far as we know, however, we have nothing in this country exactly corresponding to the "press committees" of the Germans. If our county societies would take the matter up with vigor, a decided impression could be made on public opinion which would necessarily be followed by a great reduction in the ranks of medical pretenders and humbugs. An active committee, keeping the lay press properly instructed in medical matters, and unsparing in its exposures of fraud, wherever found, would work wonders. The public only want the truth and to be convinced that it is the truth, and the success of medical impostors would terminate. Let the medical profession make it clear that it has the real interest of the public at heart and the success of the movement will be certain.

A HANDBOOK ON THE PREVENTION OF CONSUMPTION.

The Committee on the Prevention of Tuberculosis of the New York Charity Organization Society has issued a valuable report entitled "A Handbook on the Prevention of Tuberculosis." It contains, beside the usual review of the year's work and the financial report, a number

of valuable papers on the various questions which arise in regard to tuberculosis, including essays on the social and statistical aspects of the subject, on the causes of consumption and on the proper methods of treatment; it includes elaborate plans for sanatoria, lists of institutions in the United States and Canada, and a bibliography of the principal works on tuberculosis. These appendices form the bulk of the volume, and their authors have done excellent work. One of the most interesting chapters is that on the social aspects of tuberculosis by the statistician of the committee. This chapter points out that special perils exist in cities rather than in the country districts, and that certain races and occupations appear to be specially liable. The conclusion is that we must look more and more to the apparently indirect methods of dealing with the disease. The report says: "The problem would soon disappear of itself if it were possible for everybody to breathe fairly pure air, to be clean with a reasonable effort, and to have enough of the right sort of food to eat." It will require a great deal more than is being done to bring this about, but that is the main line on which we will probably make our most effective attack on the disease. One thing is encouraging: statistics show that the mortality from consumption is decreasing, and that this decrease is more marked in just those localities where, at least, an approach to the necessary sanitary reforms is being made.

THE PAINS OF TABES.

As is well known, locomotor ataxia, while not of itself a fatal disease, is often attended with symptoms or complications of a most distressing and even serious character. Motor inco-ordination is not always the most conspicuous manifestation, and it may at times be so little marked as to escape cursory observation. Not less common than ataxia, and earlier in appearance, are pains of one kind or another, and which may at times be so severe as to dominate the clinical picture. They are often mistaken for rheumatism or gout or neuritis, but their real origin can usually be determined from a study of the other symptoms present in the individual case. Sir William Gowers,[1] in a recent clinical lecture, took up for consideration the pains of tabes, discussing at some length a condition to which he gives the name of tabetic neuralgia. He makes two divisions of the pains attending tabes, namely, those that are brief, commonly momentary, but succeeding each other at short intervals in the same place, for hours, sometimes for days; and those that are prolonged, lasting for hours or days or even longer in the same place. The first variety may be superficial or deep; those of the second variety are usually deep, although diffuse surface sensations of this character are not uncommon. In some cases of tabes, pain is the only prominent symptom, the knee jerks and co-ordination being preserved. Such cases are thought to constitute a special and uncommon variety of the disease and to be due to a peculiar character of the toxic etiologic factor; and for them the designation tabetic neuralgia is considered appropriate and unobjectionable. Eleven cases of this kind analyzed by Gowers all occurred in adult men, 9 of whom presented a clear specific history, which, further, could not be excluded in the remaining 2. The interval between the primary disease and the onset of the pain varied from seven to nineteen years, the average being twelve years. The knee jerks were normal in degree and equal on the two sides in 8 cases and unequal in 2; while in 1 the reaction disappeared entirely on one side. In 2 cases, the reaction of the pupils to light was absent; in 2 it was enfeebled; in 2 it was completely wanting on one side; and in 1 there was instant contraction followed by dilatation to its former size. One patient presented characteristic atrophy of the optic nerve, with preservation of the knee jerks, of co-ordination and of cutaneous sensibility. In one patient, sensibility to pain was lost on the feet and lower legs and lower parts of the thigh; in 1 it was delayed on the legs and lost on some parts of the trunk; and in 1 it was lessened on the left leg and foot. One patient suffered from gastric crises, and he and one other complained of girdle sensation. The pains were the symptom for which all of the patients sought relief, except the subject of optic nerve atrophy. They had been present in 3 patients for one year, in 1 for two years, in 3 for three years, in 1 for four years, and in 3 for ten years. They had variously been ascribed to gout, rheumatism and neuritis. From a prognostic standpoint the outlook is favorable with respect to the development of ataxia, but the pains, although their severity can often be mitigated, can seldom be altogether arrested. There is, however, no relation between the severity of the pain and the progress or the gravity of the underlying disease. The pains are believed to originate in the extremities of the peripheral nerves. The superficial pains can be relieved temporarily by the local application of chloroform sprinkled on lint and covered by oiled silk. A more prolonged effect is produced by the hypodermic injection of cocain at the upper part of the area in which the pains are felt. The sensibility of the skin to both touch and pain can be abolished by the application of the positive anode of a galvanic battery saturated with a solution of cocain of from 6 to 8 per cent. The deep, as well as the superficial, pains, as a rule, are amenable to treatment, and the coal-tar preparations are recommended. Sometimes morphin may be required, but it should be used with caution. To lessen the tendency to the occurrence of tabetic pains, Gowers has found aluminum chlorid, in doses of 5, 8 or 10 grains thrice daily, a most efficient agent. The salicylates, also, are sometimes useful for this purpose.

1. British Med. Jour., Jan. 7, 1905, p. 1.

Medical News.

ALASKA.

A Summer Resort.—Sitka Hot Springs is soon to be opened as a health and summer resort. Drs. Henry W. Coe, Robert L. Gillespie and Walter T. Williamson of Portland, Ore., are interested in the venture and will spend about $20,000 in buildings.

ARIZONA.

County Physician Indicted.—As a result of its investigations, the grand jury of Cochise County found a true bill for manslaughter against County Physician Marshall D. Johnson, Bisbee, and he is held in bonds of $3,000.

Grand Jury Arraigns Officials.—The December grand jury of Cochise County alleges gross irregularities and willful violations of law in the conduct of county institutions; finds the food provided at the county hospital insufficient in quantity and inferior in quality; the bedding filthy; the steward, brutal and abusive, and the county physician neglectful of his duties.

New Officers Elected.—At the annual meeting of the Yavapai County Medical Society, held Dec. 10, 1904, the following officers were elected: President, Dr. John S. Barrett, Prescott; vice-president, Dr. Henry D. Thomason, U. S. Army, Whipple Barracks; secretary-treasurer, Dr. Clarence E. Yount, Prescott, and Drs. John W. Flinn and Samuel V. Fitzsimmons censors.

ARKANSAS.

Medical Building Assured.—The Medical Realty Company has been incorporated at Little Rock, with a capital of $50,000, to erect a three-story building 140x50 feet designed expressly for the use of physicians.

Federal Board Report Approved.—The Secretary of the Interior has approved the report of the Federal Medical Board in which 126 practitioners are placed on the registered list of those entitled to prescribe the waters of Hot Springs.

Would Change Name.—In the biennial report of the Arkansas State Lunatic Asylum, the superintendent, Dr. Harry C. Stinson, Little Rock, recommends that the name of the institution be changed to the Arkansas State Hospital for Nervous Diseases. During 1903 146 patients were admitted, and in 1904 90, a total of 236 new cases.

Smallpox.—A death occurred at Warren, January 28, and several cases among negroes are reported.——The Argenta Board of Health has adopted a resolution requiring the employes of all stores, mills, factories and compresses to exhibit to their respective employers a certificate of vaccination. The police have been instructed to see that this resolution is complied with. There are now 60 cases of the disease in the city, principally among negroes.——Little Rock has at present 15 cases.

CALIFORNIA.

Hospital Notes.—A hospital is to be erected in Los Angeles to cost $35,000, for the exclusive use of Mexicans of the laboring class.——The reconstructed Children's Hospital at Los Angeles was formally reopened January 28.——By the will of the late Winifrede Martin, Los Angeles, nearly $80,000 is devised to charitable institutions, including several hospitals.——The trustees of the Samuel Merrett Hospital Fund, which now amounts to $630,000, have filed a petition asking that they be allowed to build part of the hospital at Oakland, to cost $75,000, as provided in the will of the late Mrs. Catherine M. Garcelon.

Under the Ban.—"Dr." James McLean, Los Angeles, was fined $100, January 3, for practicing without a license.——"Dr." C. A. Richmond, San Francisco, was fined $100, January 17, for practicing without a license.——"Dr." Edward H. Diehl, East Los Angeles, pleaded guilty, January 21, to practicing without license and will be sentenced.——"Dr." Charles Scavazzo, Los Angeles, was found guilty, January 17, of practicing without license and fined $100.——A jury in Sacramento on January 26 disagreed in the case of T. Wah Hing, holder of an alleged Hongkong diploma, who, it was proved, practices medicine and advertises himself as a practitioner.

Personal.—Col. Alfred C. Girard, U. S. Army, has been offered the superintendency of the Children's Hospital, San Francisco, to become effective on his retirement from the service in July, and has accepted the position.——Drs. William J. Walsh and James B. Hannah, inspecting physicians of the San Francisco Board of Health, have resigned.——Dr. Palmerston C. Campbell, Point Richmond, has been appointed lieutenant-colonel on the governor's staff.——Dr. James R. Curnow, San Jose, has been adjudged insane, and was committed to the Agnew State Hospital for the Insane, January 28.——Dr. Pavlo De Vecchi, San Francisco, has been honored by the King of Italy with the title of commendatore of the order of the crown of Italy.

ILLINOIS.

Smallpox.—There are said to be 25 cases of the disease in East Smithfield, Ill.

St. Francis Hospital, Evanston, during 1904, treated 212 cases, 23 of which were of appendicitis.

Guilty of Abortion.—Dr. Wade D. Stevens, Paw Paw, was found guilty of performing a criminal operation and will receive an indeterminate sentence, unless the new trial, which he is attempting to obtain, is granted.

Joint Meeting.—Winnebago County Medical Society and the Central Wisconsin Medical Society held a joint meeting in Rockford, January 31, followed by a banquet, over which Dr. Walter B. Helm presided as toastmaster.

Changes in Sanatorium Bill.—As the result of a conference of Hon. Edward J. Glacking, who introduced a bill for the establishment of a state sanatorium for consumptives, and Dr. James A. Egan, secretary of the State Board of Health, many minor changes will be made in the bill, although its main provisions remain unchanged. The county and district medical societies of the state will be invited to co-operate in the movement and will be asked to interest the representatives from their respective districts in this bill.

Chicago.

Hospital Purchases Site.—Chicago Baptist Hospital has purchased for $37,500 the property it has occupied for many years at Thirty-fourth Street and Rhodes Avenue.

To Enlarge Building.—Passavant Hospital Association has been organized for the purpose of enlarging the building of Passavant Memorial Hospital. A building and lot have been donated, and about $30,000 additional is required for construction purposes.

White Cross First Aid.—The first of the series of public lectures under the auspices of the American White Cross First Aid Society was given by Dr. Nicholas Senn, in the public library building, February 3. Dr. Senn compared the work to be done by this society in time of peace to that of the Red Cross in time of war, and then spoke briefly on the first dressing of gunshot wounds.

January Deaths.—The death rate of January was at the annual rate of 14.70 per 1,000. Deaths from all causes numbered 2,487, 146 more than in the preceding month, and 126 more than for January, 1903. The chief contributing causes were pneumonia, 515; consumption, 272; Bright's disease, 183; violence, 175, and heart diseases, 164. Diphtheria caused 52 deaths; typhoid fever, 29; scarlet fever, 8; and smallpox 7.

Comparative Mortality.—The total of 530 deaths reported during the week, equivalent to an annual mortality of 13.88 per 1,000, are 28 fewer than reported during the previous week and 66 fewer than for the corresponding week of one year ago. Compared with that week, there were 10 more deaths reported from the acute intestinal diseases, 13 more from consumption, 5 more from measles, 6 more from smallpox and 7 more from whooping cough. On the other hand, there were 18 fewer from Bright's disease, 3 from bronchitis, 6 from cancer, 7 from convulsions, 6 from influenza, 12 from heart disease, 46 from pneumonia, 5 from scarlet fever, and 2 fewer from typhoid fever—the 3 deaths from this last-named disease being the fewest for any January week in twenty-three years.

MARYLAND.

Railway Hospital Open.—The Baltimore and Ohio Emergency Hospital at Brunswick has been formally opened.

Honor Grand Master.—The masons of Maryland are about to erect a monument to the late Dr. Charles H. Ohr, Cumberland, past grand master of the order.

Ancient History.—Dr. Bernard Steiner, Baltimore, read a paper on the life of Dr. James McHenry, January 30, before the Frederick County Historical Society. Dr. McHenry was on Washington's staff and was also secretary of war. Fort McHenry was named after him.

Baltimore.

Pneumonia Leads.—The deaths from pneumonia ran up to 34 last week, and only 23 were due to consumption.

Physician Non-suited.—Dr. George A. Strauss, who brought suit for $1,000 against the United Railway and Electric Company for alleged injuries in being thrown from a street car, failed to prove his case.

New University Journal.—There will be issued at the University of Maryland, about the first of March, a monthly medical journal, to be known as the *University Hospital Bulletin*, which will be edited by Dr. Eugene F. Cordell.

Personal.—Dr. W. Lee Howard has returned from Jamaica.——Dr. Hugh H. Young has been on a pleasure trip to Nassau, W. I.——Dr. Champe S. Bradfute, who disappeared from his home here on May 11, 1904, has returned. For five months his mind was a blank, and when he recovered his mind he found himself in Virginia. He expects to resume practice.

MASSACHUSETTS.

Fire at Sanatorium.—The New England Sanatorium at Stoneham was damaged by fire to the extent of $25,000, January 1. The medical staff and nurses succeeded in removing all the patients without casualty.

Bequests.—By the will of the late E. W. Corman, Boston, Harvard University and Massachusetts General Hospital are named as beneficiaries to the extent of more than a million dollars.——Lawrence General Hospital has been bequeathed $1,000 by the late George E. P. Dodge of Chicago.

Hospital Notes.—Brockton Hospital Corporation, at its annual meeting, elected Dr. A. E. Elliott Paine, vice-president. During the year the governor of the state presented to the corporation a fully-equipped surgical building, at an expense of about $25,000. Dr. Nathaniel C. King was added to the executive committee.——At the annual meeting of the staff of St. Vincent Hospital, Worcester, held January 19, Dr. John T. Duggan was re-elected chairman, and Dr. David B. Lovell was elected secretary.

Personal.—Dr. Timothy F. Daly, Lawrence, was given a chest of silverware by the Galen Medical Club, January 2.——Dr. Charles N. Raymond, Rehoboth, was murderously assaulted on January 1 by a Frenchman whom he had befriended.——Dr. Carl H. Eidam, Lawrence, has been appointed a member of the board of health.——Dr. Elliott Washburn has been reappointed chairman of the Taunton Board of Health.——Dr. Clarence B. Livingston has been appointed physician of District No. 1, Lowell.——Dr. Walter A. Smith, Springfield, has been appointed medical director of the First Brigade, M. V. M., with rank of lieutenant colonel.

MINNESOTA.

Hospital Incorporated.—Mennonite Hospital of Mountain Lake has been incorporated with a capital stock of $25,000.

Acquitted of Murder.—Dr. Rudolphe T. Germain, Barnesville, charged with murder in the second degree, was found not guilty, at Moorhead, January 16.

Personal.—Dr. Alexander J. Stone, St. Paul, has been reappointed surgeon general of the Minnesota National Guard.——Dr. George E. Benson, Minneapolis, has gone to Europe for six months.——Dr. Edward Benham, Amboy, has been elected physician for the seventh district of Blue Earth County.

State Aid for Local Laboratories.—The State Board of Health, at its meeting, January 31, passed a resolution to the effect that "when cities of ten thousand population or upward have established a laboratory within the state, which in the opinion of the State Board of Health is an efficient one, it may then be made a branch of the State Board of Health laboratory and receive financial aid from the state. The application for affiliation with the State Board of Health is to be made by the local board of health under the approval of its city council. The amount of state aid to be given such a laboratory is to be determined by the State Board of Health." Under this provision a branch laboratory will probably be established at an early date at Duluth.

MISSOURI.

Physician Imprisoned.—Dr. J. D. Todd, Richards, formerly a member of the legislature, who shot and killed R. T. Wall in May last, was found guilty of murder in the second degree and sentenced to imprisonment for twelve years in the state penitentiary.

School Children To Be Examined.—The 35 physicians recently appointed to examine school children in Kansas City commenced their work January 30. They will examine and report any case of communicable disease, but will not treat the children.

New Medical Practice Act.—The general assembly, now in session, is considering a new medical practice act, the essential feature of which is the provision that applicants for licensure must present a diploma from a reputable college before they will be admitted to examination.

Personal.—Dr. Leonidas H. Laidlaw, resigned as medical director of the Louisiana Purchase Exposition, Dec. 31, 1904.——Dr. Charles W. Chastain, Plattsburg, has been appointed physician to the state penitentiary.——Dr. R. Leon Hill, Boonville, has been made a member of the Cooper County Medical Board of Pension Examiners.——Dr. J. Phillip Knoche, Kansas City, has been granted the right to change the spelling of his name to Kanoky.

MONTANA.

Isolation Hospital Opened.—The new isolation hospital for Billings was opened, January 19, and Dr. C. B. Miller has been appointed superintendent.

Diphtheria Prevails at Slockett.—On account of the prevalence of diphtheria at Slockett, the Cascade County Board of Health has decided to turn the jail into a quarantine station, where all diphtheria patients will be left until danger of infection is removed.

State Board Report.—The biennial report of the State Board of Health shows that smallpox has been greatly reduced. In 1902 there were 764 cases in the state; in 1904, only 122. Diphtheria increased 141 cases, as compared with 1903; scarlet fever decreased from 339 to 179, and there was also a decrease in typhoid fever cases of 42 for the year.

NEBRASKA.

Hospital Acquires Land.—The South Omaha Hospital Association has purchased two lots on which it proposes to erect a brick building to cost $25,000.

Physician Wins Suit.—Dr. Milton H. Everett, Lincoln, was given the decision in the suit brought against him for damages by reason of an operation alleged to have been unsuccessful.

Smallpox in Beatrice.—There are about 24 cases of smallpox in Beatrice, most of which are of a very mild type. The city council has passed an ordinance which provides a heavy fine for individuals violating the smallpox quarantine regulations.

State Capitol Insanitary.—A report has been made to the adjutant general that the Nebraska State Capitol, on which the state has expended $1,500,000, is in an insanitary condition, and is unsafe for the state officials whose duties compel them to remain in the building.

Personal.—Drs. John B. Lichtenwallner, Dunbar, and Will T. Neil, Nebraska City, have been appointed physicians of Otoe County.——Dr. James L. Alden, Pierce, will be superintendent of the new state hospital at Norfolk, when it is completed, and Dr. Frank S. Nicholson, St. Paul, will be assistant superintendent.——Dr. Artie Folsom, Beatrice, is now in London.

NEW YORK.

Fire in Hospital.—St. Mary's Hospital, Jamaica, L. I., narrowly escaped a serious fire. Through the efforts of one of the physicians and two attendants the flames were held in check until assistance arrived.

Influenza Among Life-Savers.—An epidemic of influenza prevails among the members of the Long Island coast life-saving crews. Some of the stations have more than one-half their members incapacitated. Hardships encountered during the recent storms are said to have aggravated the cases.

Medical Society of the State of New York.—This body convened at Albany on January 31, February 1 and 2. The officers for the ensuing year are: President, Dr. Joseph D. Bryant, New York City; vice-president, Dr. Herman R. Ainsworth, Addison; secretary, Dr. Frederick C. Curtis, Albany; treasurer, Dr. Ogilvie D. Ball, Albany.

High Death Rate.—The State Board of Health reports 141,564 deaths in the state during 1904, the largest number ever officially recorded. This is a death rate of 18.2 per thousand, as against an average of 17.2 for the past five years. Consumption caused 14,000 deaths, or about 10 per cent., and there were 8,000 deaths from pneumonia during the first five months of the year.

Tuberculosis Hospital a Success.—The first report of the state hospital for the treatment of incipient tuberculosis, which was established by an act of legislature at Raybrook, in the Adirondacks, was presented to the New York State Medical Society. Although the institution has only been open since July 1, 82 patients have been admitted, 11 have been discharged as cured, 19 have apparently recovered, in 34 the disease has been arrested and the remainder show improvement, with the exception of 5 who have not been there long enough to justify conclusions.

Duffy's Malt Whisky Declared Not Medicine.—The State Excise Department has won its case against a New York City druggist, the principal point involved being whether Duffy's malt whisky was a liquor within the meaning of the liquor tax law, or whether it was a patent or proprietary medicine, not subject to its provisions. At the trial in the lower court, the defense showed testimonials to the medicinal effects of the

liquor, but the chemists, C. A. Crampton, chief chemist of the United States International Revenue Department, Joseph Du Guehuee, chief chemist of the Health Department of New York City, and Edward W. Wheeler, chemist for the State Agricultural Department, showed that the whisky contained 45 per cent. alcohol, and that it did not contain any appreciable quantity of any drug or medicine other than alcohol. The lower court gave a verdict for the excise department, declaring the $500 bond of the druggist forfeited for violation of his pledge not to sell liquor except on the prescription of a physician. The Appellate Division of the Supreme Court sustained this finding.

More Bills Before the Legislature.—Taxing Alcohol—A measure, interesting in view of the tragedy attending the adulteration of cheap whisky with wood alcohol in New York City, taxes all sellers one-third of the price of all alcohol sold, compels them to report to the State Department of Health monthly, and imposes a fine of $50 for each violation of the law. ——To Change Management of State Institutions—A representative of the State Charities Aid Association has prepared a bill providing for the administration of the state insane asylums as it existed before the Odell régime. This means that local boards of managers are to be re-established for each institution, with full powers of supervision and control, aside from administering the finances of the institutions, which will be taken care of, as now, from Albany.——Optometry Bill—Efforts are being made by an organization of opticians known as the Optical Society of the State of New York to secure the enactment of a law to regulate and define the practice of optometry. With this object in view the optical society distributed to members of the medical profession 8,000 copies of a pamphlet entitled "Facts About the Optometry Bill," as well as copies to the state officials and members of the legislature and to all leading newspapers of the state. Following this it mailed subscription blanks to opticians asking for money contributions to defray the expenses of the campaign. The Medical Society of the State of New York will, through its committee on legislation, institute a vigorous opposition to the efforts of the optical society. The co-operation of the medical profession is solicited and the Opticians' League of the State of New York will join in the opposition, as they believe that the fitting of glasses for the relief of headache, dizziness, diplopia and other symptoms is no part of the work of opticians, but should be restricted to educated and licensed physicians.

New York City.

Gift to Academy of Medicine.—The complete collection of monographs possessed by the late Prof. Gerhardt has been purchased and presented to the library of the Academy of Medicine by Dr. A. Jacobi.

Fireworks Ordinance Shelved.—There has been an indefinite postponement of the hearing on the ordinance prohibiting the use of fireworks in this city. Many other cities have such ordinances and it is a source of regret that this city should neglect a matter which affects life and property to so great an extent.

Coroner Found Guilty.—Dr. Jackson, convicted on the charge of soliciting a bribe of $500 to clear "Dr." John W. Alexander, who was arrested on the charge of having caused the death of a woman by a criminal operation, has been found guilty. There is another indictment against him for having attempted to bribe the deputy assistant district attorney.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended January 30 389 cases of tuberculosis, with 167 deaths; 272 cases of diphtheria, with 40 deaths; 248 cases of scarlet fever, with 13 deaths; 174 cases of measles, with 7 deaths; 174 cases of varicella; 41 cases of typhoid fever, with 14 deaths; 8 cases of smallpox, and 28 deaths from cerebrospinal meningitis.

Order for the Health Board.—In the Supreme Court of Brooklyn an order has been granted directing the Health Board of the City of New York to show cause why a peremptory writ of mandamus should not be issued commanding the appointment of an assistant superintendent for the borough of Brooklyn. The Brooklyn assistant was removed last August, and druggists and others wishing to confer with the health board have been compelled to come to the central office in New York.

Free Meals for School Children.—The statement that there are 70,000 ill-nourished children in the schools of New York, many of whom are in the habit of coming breakfastless to school, led to a conference of the Charities Organization Society, the Society for the Improvement of the Condition of the Poor, the Children's Aid Society, and others, for a discussion of the subject. It was the consensus of opinion that there was no abnormal destitution nor that there were many children who were sent to school without breakfast because of the inability of the parents to provide for them. It was agreed, however, that there were many underfed children, and a committee was appointed to investigate and ascertain the real causes. The Salvation Army has already established several stations where breakfast is served to school children.

Special Courses Continued.—Cornell University Medical College will continue this year the courses instituted last season in lectures on special subjects connected with general medicine and general surgery. Drs. Charles L. Gibson, Ellsworth Eliot, Jr., and E. L. Keyes, Jr., will each give about six lectures on topics connected with general surgery. Drs. L. A. Conner, M. G. Schlapp, C. N. B. Camac and O. H. Schultze will lecture on topics connected with general medicine. Dr. John McGaw Woodbury, the present commissioner of street cleaning, has promised to deliver several lectures on municipal sanitation. These lectures are given to the third and fourth-year students and have been found of great value in the elucidation of subjects in which the lecturers have demonstrated their proficiency. At the same time they are of value to the faculty who are thus able to obtain knowledge of the latest advancement made in the college laboratories.

OKLAHOMA.

Change of Name.—The Protestant Hospital, Oklahoma City, has changed its name and will hereafter be known as the Oklahoma Hospital.

Personal.—Dr. Elmer E. Cowdrick, Enid, resigned as superintendent of the Territorial Board of Health February 1.——Dr. George A. La Motte, Oklahoma City, has been appointed physician of Oklahoma County.

Physicians Need Not Pay Fee.—The Territorial Board of Health and Medical Examining Board to-day lost an important case in the courts wherein is involved the payment of a $30 fee by applicants to practice medicine in Oklahoma. Physicians who have secured such certificates sued for the recovery of their fee and secured judgment. As the law has been in force for some time, the total fees to be returned to applicants aggregated a large sum. The board will appeal.

PENNSYLVANIA.

Named for Medical Board.—The governor has presented the following names to the senate for members of the State Board of Medical Governors, to serve three years: Dr. W. D. Hamaker of Meadville, and Dr. M. P. Dickeson of Glen Riddle, representing the Medical Society of Pennsylvania; Drs. J. C. Guernsey and Edward Cranch of Erie, Pa., representing the Homeopathic Medical Society; Dr. William Rauch of Johnstown, and Dr. J. M. Louther of Somerset, representing the Eclectic Medical Society.

To Treat Consumptives.—A bill has been introduced in the legislature for the selection of a site and the erection of a state hospital for the treatment of incipient tuberculosis. The bill provides that the institution be located within the limits of the state forestry reservation in Franklin County. From 500 to 1,000 acres are to be set aside for the use of the institution. A commission of nine persons is created to select the site and to build the hospital. The commission is to be composed of the auditor general, the commissioner of forestry, the president of the senate, the speaker of the house, and three practicing physicians to be appointed by the governor, one senator, and one representative. The bill provides for an appropriation of $200,000. Patients who can pay for treatment will be required to do so by direct application to the board of trustees. Those who can not pay are to be admitted on the recommendation of county commissioners, directors of the poor, or the departments of charities of counties and cities.

Philadelphia.

Personal.—Dr. Alfred Gordon, on January 23, was appointed chief of the clinic of nervous and mental diseases in Jefferson Medical College Hospital.——Dr. Benjamin Horn and Dr. H. R. M. Landis have been appointed demonstrators of medicine in Jefferson Medical College.——Dr. John Kuestner sailed for Jamaica January 26.——Dr. S. Weir Mitchell has been selected to present the candidates for honorary degrees of the University of Pennsylvania on February 22. President Roosevelt will deliver the oration.——Dr. David L. Edsall and Dr. Alfred Stengel addressed the annual meeting of the Medical and Surgical Society of the District of Columbia in Washington, February 2.

GENERAL.

Life Insurance Statistics.—The report of the medical department of the Mutual Life Insurance Company of New York, in its sixty-second annual statement, shows that the total deaths exceeded those of 1903 by 434, the average age at death being 51.96 years. The classification of causes of death is interesting, owing to the presumption that policy holders are more careful of their health than others. This classification shows 510 deaths from organic disease of the heart; 504 from consumption; 477 from pneumonia; 438 from Bright's disease; 387 from apoplexy, and 112 from old age.

Nathan Lewis Hatfield Prize.—Five hundred dollars will be awarded by the College of Physicians of Philadelphia to the author of the best essay submitted on or before March 1, 1906, on "The Clinical and Pathologic Diagnosis of Sarcoma." Essays must be typewritten, designated by a motto or device, and accompanied by a sealed envelope bearing the same motto or device, and containing the name and address of the author. They must embody original observations and researches. The committee reserves the right to make no award if none of the essays submitted is considered worthy of the prize. For further information address Francis R. Packard, M.D., chairman, College of Physicians, 219 South Thirteenth Street, Philadelphia.

FOREIGN.

Mikulicz' Operation.—Von Eiselsberg of Vienna operated in January on Professor Mikulicz on account of an umbilical hernia. Recovery has been uneventful.

Influenza in Berlin.—The Public Health and Marine-Hospital Reports state that influenza is very prevalent in Berlin. The epidemic seems to be more virulent than usual, and a number of deaths have occurred.

Preventive Circular.—The faculty of the Budapest university has offered three prizes of $20 to $60 for the best article written in a popular style, designed to enlighten youth in regard to the nature, the consequences and the prophylaxis of venereal diseases.

Sleeping Sickness in a European.—Dr. C. França of Porto reports a case of trypanosomiasis in a man of 25 returning from Portuguese Africa after an absence of thirteen years. The subject had previously had malaria, beri-beri and blackwater fever. Trypanosomata were found in the blood.

Kaiserling Now a Professor.—Dr. K. Kaiserling was graduated only twelve years ago, and he has been privat docent and custodian of the pathologic museum at Berlin since 1901. He has now been made professor. In these few years he has won international fame by his method of preserving anatomic specimens in their natural colors. Some of his specimens have been on exhibition at all the large expositions of the last few years.

Death of the Improver of the Microscope.—E. Abbe died recently at Jena, aged 64. He was the inventor of numerous improvements in instrumental optics, and to him bacteriology owes its marvellous strides in late years. He has been connected with the Zeiss factory, since 1860, and at the same time was honorary professor of astronomy and meteorology at Jena. His successful reorganization of the Zeiss establishment was on a basis which tends to solve some of the more pressing social problems of the day.

Medicine in the Prussian Budget.—According to our German exchanges, the Prussian government is much more liberal in its medical appropriations than is the case in this country. In the appropriations for the universities the effort is everywhere apparent to make practical use of the later achievements of medicine, some of which require costly equipment. In Berlin the new Polyclinic Institute for internal medicine is to be equipped with instruments and apparatus to cost over $5,000. The Anatomic Institute is to be enlarged at an expense of over $50,000, and about $25,000 is to be spent on the clinic for cutaneous and venereal affections, besides large amounts on other medical institutes, etc. For the campaign against trachoma this year nearly $88,000 has been again appropriated; $7,500 for research on foot and mouth disease; the same amount for the campaign against typhoid in the Trier district; $2,500 for cancer research, and $2,500 for the Berlin Cancer Hospital. A special laboratory is to be erected for Robert Koch, with $750 for its yearly maintenance. An innovation is an appropriation of $11,000 for supervision of harbors and shipping to keep out plague and cholera. New buildings are planned for seven university clinics and institutes, and a number of new assistants are to be appointed. Comparatively large amounts have been appropriated to bring the *x*-ray departments of the universities to a higher grade of excellence, and for the purchase of new instruments for the polyclinics, etc. A deficit of $52,400 at the Berlin surgical clinic is to be made up, and another at Göttingen of $7,500 and one at Marburg of nearly $1,400 in the ophthalmic clinic. The appropriation for postgraduate courses has been increased from $1,500 to $2,250.

Correspondence.

Panama—The Congress—The Canal.

PANAMA, Jan. 7, 1905.

To the Editor:—The fourth Pan-American Medical Congress was held at Panama, Jan. 2-6, 1905. In some respects Panama was a good place to hold a meeting. While geographically the country lies at nearly the hub of the western hemisphere, and is, perhaps, rather inaccessible to the majority of the represented nations, the congress was attended by representatives from Peru, Mexico, Guatemala, Nicaragua and Cuba, as well as from the United States.

As the specially chartered steamer *Athos*, which was unfortunately delayed and did not reach Panama until the afternoon of the last day of the meeting, carried some of the officers and about half those who attended, these physicians took no real part in the proceedings. Some papers of a thoroughly scientific nature were read, such as Frank's "Experiments and Experience in Liver Surgery," Senn's description of "Coxa Vara," Dr. W. C. Gorgas' résumé of "Sanitary and Hygienic Work in Havana," and Dr. Carlos Finlay's paper on "Sanitary Conditions in Cuba." The paper of Dr. Liceaga of Mexico, read by Dr. Ramon, gave the methods adopted by the Mexican government to stamp out plague in Mazatlan.

It was decided to hold the next meeting three years hence in Guatemala City, as this republic is very anxious to become the hostess. She has appropriated money for the purpose and promises to have ready the railway to the gulf, so that the journey from the United States will be comparatively easy. American delegates would have preferred the United States, Canada or Jamaica, but their opposition was not well enough organized to carry the point, and it is to be hoped that the expressed fear that the congress will become too Latin-American is unfounded.

Though Panama had little to show the visitors in the way of hospitals and laboratories, such as physicians usually expect in visiting foreign countries, there was the stupendous engineering problem involved in the construction of the canal, hand in hand with which goes the attempt to wipe out of existence the two diseases—malaria and yellow fever—which have hitherto been considered to be actually part of the soil and climate. In previous attempts at construction of the canal it was necessary to accept conditions as they were found, to dole out quinin, to treat individuals when they fell ill, and to give advice as to food, air and water. But here, for the first time, science is working on demonstrable medical as well as engineering facts. The microscope and instruments of precision are applied with as great accuracy as the steam dredge and there is a plan of sanitation as carefully outlined, estimated and undertaken as is the engineering plan itself.

Panama and Colon are probably the hottest places within the canal zone, while Culebra and Empire seem dryer and cooler. Panama has probably one or more cases of yellow fever nearly the whole year through, and to stamp it out of Panama, as has been done in Havana, the same methods must be adopted. Panama must be drained, the streets cleaned, and its houses fumigated. Colon must be equally well cared for and the whole canal area must be policed and inspected. Plans for this are already under consideration. The United States marines on the Isthmus live in barracks at Empire. They are picked men and are living under the strictest medical surveillance. Their food, water, clothing and hours of work and rest are rigidly controlled. They must be in bed at an early hour, they must sleep under mosquito netting, and they must

take quinin. Even the better class of canal employes, the office force, have no such regimen. Each employe lives where he wishes or must, eats what he can get and exposes himself unrestrainedly. We wish to avoid the want and waste of the French, but not to fall into sinful economy, and to do justice to unacclimated employes a plain, comfortable barracks should be built on Ancon Hill or on the outskirts of Panama, where they not only may but must live. Some accessory zest and recreation such as clubs, gymnasiums and games should be added to the daily life of the employes to stimulate them to overcome the moral and physical enervation which has been so dreaded in tropical districts. The sanitary department is compelled to work under the old system of army contract surgeons, which may be well enough in its place, but on the Isthmus is not leading to the best results.

There were many excursions to various points of interest, two of the most enjoyable being to the island of Taboga, about eight miles across the bay, and to Culebra, where the practical and most decisive work on the canal is now in progress.

ALBERT B. HALE.

Fifty Consecutive Cases of Pneumonia Without a Death.

SCOTLAND, PA., Feb. 2, 1905.

To the Editor:—I just read with much interest the article by W. J. Galbraith, M. D., in THE JOURNAL, January 28, page 291, also the article by the same writer in THE JOURNAL, July 9, 1904, page 108. Dr. Galbraith has certainly been most fortunate in his treatment of pneumonia by the heroic use of sulphate of quinin, and he certainly deserves credit for the fearless expression of his convictions. With the march which this disease, "the captain of the men of death," is making annually, it is of the greatest moment that any successful manner of combating the power of the disease be recognized by the profession. With such apparently fortunate results by use of these large doses of sulphate of quinin that Dr. Galbraith reports, one naturally feels an honest desire to know whether this method might be the sheet anchor of the disease, or whether Dr. Galbraith was simply fortunate in the results. I am convinced that many members of the profession would be glad to read the opinions or conclusions of others regarding the probable success by this manner of using quinin in pneumonia.

JOHN J. COFFMAN.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

THE ADMINISTRATION OF NITROGLYCERIN.

ROCKPORT, KY., Jan. 24, 1905.

To the Editor:—Referring to your editorial Oct. 22, 1904, on this subject, I find you state that von Noorden advises larger doses "than has hitherto been thought warrantable," stating that "when begun with small doses, as much as 1/6 gr., or even 1/5 gr. of nitroglycerin may be given in 24 hours." Please permit me to say, that in April and May, 1897, I began giving a man with chronic parenchymatous nephritis one drop of a 1 per cent. alcoholic solution of nitroglycerin (1/100 gr.) three times a day. I increased the dose as could be tolerated until more than 25 drops (1/4 gr.)—I do not remember just how much more, but more I know—were given three times a day (3/4 gr. a day). There were no bad effects at any time. Improvement and complete recovery accompanied its use.

I wish to say, also, that I dared to give these doses because of a case which I saw in Da Costa's clinic at Jefferson Medical College Hospital in October, 1888. A note made when attending these clinics reads: "Saw a young man on Oct. 20, 1888, who was taking 20 grains of pure nitroglycerin in 24 hours, for chronic parenchymatous nephritis, with good results and no bad effects. (See notes on clinics.)" This is no fiction. When the young man was presented, Dr. Stewart, chief of the clinic, read, "He is now taking 5 grains of nitroglycerin four times a day." Prof. Da Costa, interrupting, said, "You mean five hundredths of a grain." Dr. Stewart, blandly replied, "I mean five grains of the pure drug." Prof. Da Costa grew interested. Smilingly he said, "Let's see him take it." A dose of five grains was prepared in the presence of all. A sphygmograph was applied, and the dose was administered. Within less than three minutes the sphygmogram began to change in appearance. The effect, however, was not very great. The face flushed and the patient said there was just a slight fullness of the head. The records of Jefferson Hospital will corroborate me. And here is von Noorden, in 1904, saying that nitroglycerin may be increased in dosage to even 1/5 grain in 24 hours.

J. D. MADDOX.

ANSWER.—In spite of the large amounts of nitroglycerin which can be given to animals without fatal result, medical men generally have been very cautious regarding its administration to human beings. This wariness is doubtless due to the fact that alarming symptoms are sometimes produced by relatively small quantities of the drug. A dose of 1/8 of a grain (2 1/2 gtt. of a 5 per cent. solution) has been known to cause vertigo and collapse. The literature indicates that when a patient begins with very small doses and gradually increases the amount, a marked degree of tolerance may be developed. The large doses referred to by our correspondent are truly remarkable, and would doubtless make even v. Noorden shudder. Our advice would be to go very slowly always until the tolerance in a given case has been made out. The main point to which we desired to draw attention by our editorial was the uncertainty of dosage of nitroglycerin in tablet form and the desirability of prescribing it always in alcoholic solution.

ANTIQUATED TEACHING IN MEDICAL COLLEGES.

A. B. C. writes that he can not agree with Dr. Leffmann's statement in THE JOURNAL of February 4, p. 405, "that few if any teachers at the end of twenty years can represent the existing state of their science." A. B. C. says that men such as Osler, Welch, Halsted, Remsen and Kelly, of Johns Hopkins, and instructors, equally as long or longer in practice, in such institutions as Harvard, Chicago, Columbia, Ann Arbor, Pennsylvania and other universities, not only represent "existing" science, but are compelled to do so or original research would not progress; in fact, that no teacher would be tolerated at the leading colleges for more than a semester if he did not represent the "existing state" of his science. A. B. C. says that the teacher to whom he referred in his first letter teaches the physiology of years ago, and apparently knows nothing of electrotonus, or rather never mentions it in his lectures; that he never speaks of the neuron doctrine, or of regeneration of nerve fibers from the separated peripheral endings; that he attributes everything to "uric acid diathesis," while such products of metabolism as leucin, tyrosin, xanthin, nuclein, hypoxanthin, etc., appear to be mere words to him; that adenin and guanin are unknown; that he never mentions Flechsig's association centers in his lectures on cerebral localizations; that he seems unaware of the importance of oxybutyric acid in diabetes; that he still teaches the old idea of leucocytes producing the blood plaques; that his lectures indicate that he knows nothing of the internal ferment of the pancreas, or the presence of cholin in the cerebrospinal fluid, or the derivation of cholin from lecithin; and that Foster's Physiology and Howell's American text-books are apparently unknown to him except by name. He adds: "If, as Dr. Leffmann says, the charge of being behind the times could be used to vacate most professional chairs, why, then, I say, they should be vacated. Would any university tolerate an 'antique' teaching the chemistry, physics or biology of twenty years ago? Would any of our schools of pure science retain the teacher who teaches such physiology as I have cited? Why, then, are our medical schools so complacent and satisfied with themselves?"

Marriages.

JOHN K. JAMIESON, M.D., Chicago, to Miss Ethel Gibson of Waukesha, Wis., January 19.

ANDREW C. LAWRENCE, M.D., Baltimore, to Miss Rosa Levin, at Ellicott City, May 11, 1904.

CHARLES C. BRITT, M.D., to Miss Esther Tracey, both of Conshohocken, Pa., January 26.

FREMONT C. KNIGHT, M.D., Waukegan, Ill., to Mrs. Mary Holman, at Chicago, January 25.

RALPH S. MITCHELL, M.D., to Miss Mabel H. Lucas, both of Eden Prairie, Minn., January 25.

THOMAS S. LIPPINCOTT, M.D., Pottstown, Pa., to Miss Viola White of Mount Holly, N. J., January 30.

FRANK G. CARLSON, M.D., Thornton, Iowa, to Miss Mary Atwater of Iowa City, Iowa, February 1.

WILLIAM FORD WARD, M.D., to Miss Winifred Belle Farrington, both of Binghamton, N. Y., January 26.

EDWIN LINCOLN GOSS, M.D., Carrington, N. D., to Miss Nellie Della Standish of Sanborn, N. D., January 15.

FRANCIS W. DREW, M.D., Ethel, Mo., to Mrs. Lorena Lillian Cross of St. Louis, at Macon, Mo., January 26.

BEVERLY RANDOLPH KENNON, M.D., Norfolk, Va., to Miss Ruth Alexander Ferebee, at Oxford, N. C., February 1.

Deaths.

William **Johnston, M.D.** Transylvania University Medical Department, Lexington, Ky., 1838, the oldest practitioner in St. Louis, and third of the quartette of octogenarians honored two years ago by the St. Louis Medical Society at a banquet, to die; president of the St. Louis Medical Society for several years, died at his home in St. Louis, January 31, from senile debility, after an illness of nine weeks, aged 90. Eight ex-presidents of the society acted as honorary pall-bearers.

Phillip Long Dieffenbacher, M.D. Jefferson Medical College, Philadelphia, 1855; a member of the American Medical Association; the oldest practitioner in Mason County, Ill.; assistant surgeon and surgeon of the Eighty-fifth Illinois Volunteer Infantry in the Civil War; president of the Mason County Medical Society, and member of the Illinois State Medical Society, died at his home in Havana, Ill., January 29, aged 74.

John H. Doughty, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1863; surgeon during the Civil War; health officer of Matteawan and Fishkill, N. Y.; for several terms president of the Dutchess County Medical Society, died at his home in Matteawan, January 28, from pneumonia, after an illness of four days, aged 74.

John Shore, M.D. Jefferson Medical College, Philadelphia, 1842, formerly a member of the St. Louis city council and board of health, and a pioneer practitioner of that city, died at his home in St. Charles, Mo., from catarrhal pneumonia, after a long illness, aged 85.

Frederick Otis Spooner, M.D. University of Vermont Medical Department, Burlington, 1892, of Sherburne, N. Y., died at Faxton Hospital, Utica, N. Y., January 30, a few hours after an operation for obstruction of the common duct, aged 38.

Mathew R. Hall, M.D. New York University, New York City, 1857, colonel in the Confederate service during the Civil War, died suddenly at his home in Warrenton, Ga., January 28, from heart disease, aged 62.

Henry **Boynton, M.D.,** Vermont Medical College, Woodstock, 1852, surgeon during the Civil War; author and lecturer on historical subjects, died at his home in Woodstock, Vt., January 30, aged 81.

Charles C. Ellis, M.D. University of Vermont Medical Department, Burlington, 1867, died at his home in Somerville, Mass., January 28, from pneumonia, after an illness of two weeks, aged 57.

Eugene C. French, M.D. University of Michigan Department of Medicine and Surgery, 1882, died at his home in Orlando, January 26, after an illness of four years, from chronic bronchitis, aged 50.

Edward Linzee Cunningham, M.D. Harvard University Medical School, Boston, 1832, said to have been the oldest graduate of that institution, died at his home in Newport, R. I., January 29, aged 95.

John Bagby, M.D. University of Maryland School of Medicine, Baltimore, 1867, died suddenly from heart disease at the residence of his daughter in Lake Village, Ark., January 29, aged 61.

Henry C. Herring, M.D. University of Louisville (Ky.) Medical Department, 1859, died at his home in Lancaster, Ky., January 19, from septicemia, after an illness of three weeks, aged 72.

John M. Donlan, M.D. Harvard University Medical School, Boston, 1897, a noted athlete, died at his home in Fitchburg, Mass., from consumption, after a long illness, January 26, aged 31.

Walter Day Otis Kellogg Strong, M.D. University of Buffalo (N. Y.) Medical Department, 1847, died suddenly at his home in Fishkill Landing, N. Y., January 26, from heart disease, aged 81.

Jesse C. Waldo, M.D. College of Medicine, Syracuse (N. Y.) University, 1897, died at his home in Hulburton, N. Y., January 24, from pneumonia, after an illness of nine days, aged 32.

Jephtha Phelps Haynes, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1870, died at his home in Beaumont, Texas, January 26, after a long illness, aged 78.

Francis J. Lemoyne Johnson, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1897, died suddenly at his home in Washington, Pa., January 25, aged 33.

Samuel Johnson Mathews, M.D. University of Nashville, 1859-1860, died at his home in Mayfield, Ky., January 21, from septicemia, after an illness of seven weeks, aged 70.

Virgil W. Conner, M.D. Illinois, 1890, died at his home in Lansing, Mich., of which he was city physician for two years, from paresis, after an illness of one year, aged 57.

Lucinda Dille, M.D. Cincinnati, Ohio, 1855, medical missionary in Jamaica for three years, died at the home of her nephew in Red Oak, Iowa, June 17, 1904, aged 83.

James McElderry Mullikin, M.D. University of Maryland, Baltimore, 1842, died at his residence near Collington, Prince George's County, Md., February 1, aged 85.

Andrew H. Askew, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1869, died at his home in Harrellsville, N. C., February 1, aged 61.

John Stoddard, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1900, died suddenly at his home in Silver Creek, Neb., January 30.

Louis De Plasse, M.D. University of Louvain, Belgium, 1866, died at his home in New York City, January 24, from the effects of a runaway accident two years before.

William B. Squire, M.D. Cincinnati, 1857, surgeon during the Civil War, died suddenly from heart disease, January 28, at his office in Worthington, Ind., aged 74.

Dwight W. Chase, M.D. Jefferson Medical College, Philadelphia, 1846, formerly of Delphos, Kan., died at the home of his daughter in Salina, Kan., January 18.

Henry Vidal, M.D. University of Berlin, Germany, 1873, died at his apartments in Tacoma, January 21, from nephritis, after an illness of two years, aged 55.

Homer L. Bartlett, M.D. College of Physicians and Surgeons in the City of New York, 1858, of Brooklyn, died at Thomasville, Ga., February 3, aged 74.

Squire S. Dilley, M.D. Cincinnati, 1894, died at his home in Pemberville, Ohio, January 28, from pneumonia, after an illness of four days, aged 45.

William W. Wilson, M.D. University of Maryland School of Medicine, Baltimore, 1866, died at his home in Glenarm, Md., February 2, aged 78.

William A. Mitchell, M.D. Medical School of Virginia, Richmond, 1873, died at his home in Mangohick, Va., February 2, aged 63.

Callohill M. Stigleman, M.D. Medical College of Virginia, Richmond, 1857, died January 30 at his home in Floyd, Va., aged 75.

Jennie Low Lynch, M.D. New York City, 1897, died recently from pneumonia at the home of her mother in Liberty, N. Y., aged 40.

Andrew J. Wesco, M.D. Ohio, 1881, mayor of Seven Mile, Ohio, died at his home in that place, January 30, after a long illness.

Leonidas M. Jones, M.D. Ohio, 1857, died at his home in Brooklyn, Mich., from senile debility, January 30, aged 82.

State Boards of Registration.

COMING EXAMINATIONS.

Kansas State Board of Medical Registration and Examination, Topeka, February 14-15. Secretary, G. F. Johnston, M.D., Lakin.

Connecticut Medical Examining Board, City Hall, New Haven, March 14-15. Secretary, Charles A. Tuttle, M.D., New Haven.

Massachusetts Board of Registration in Medicine, State House, Boston, March 14-15. Secretary, Edwin B. Harvey, M.D., Boston.

Maine Board of Medical Registration, City Building, Portland, March 28. Secretary, Wm. J. Maybury, M.D., Saco.

Alabama Report for 1904.—Dr. W. H. Sanders, chairman of the State Board of Examiners, reports the written examinations held in Alabama during 1904. The number of subjects examined in was 10, and percentage required to pass, 75. The total number examined was 138, of whom 13 were undergraduates. One hundred and eighteen passed, including 4 undergraduates, and 20 failed, of whom 9 were undergraduates. The following colleges were represented:

	PASSED.		
College.		Year Grad.	Per Cent.
Medical College of Alabama,	(1884) 90, (1892) 78, (1900) 96, (1901) 84, (1902) 87, (1903) 90, 91. In 1904 the grade of 77 was reached by three, 79 by one, 81 by one, 82 by one, 83 by four, 84 by two, 86 by three, 87 by two, 88 by one, 89 by three, 90 by two, 91, 94, 95 and 96 by one each.		

Tulane University.....(1904) 79, 79, 81, 87, 89, 89, 90, 96
Chattanooga Med. Coll., (1902) 78, (1904) 78, 78, 80, 83, 84, 84, 84, 86, 91.
University of Tennessee.....(1893) 80, (1904) 94, 95
University of Nashville.....(1903) 88, (1904) 75, 76, 78, 86, 86
Memphis Hosp. Med. Coll., (1903) 75, 79; (1904) 75, 78, 79, 80, 85, 86, 87, 87, 90.
Vanderbilt University.....(1903) 93, (1904) 82, 86, 88
Univ. of Virginia..(1897) 88, (1900) 90, (1901) 80, (1904) 79
Columbia University.....(1904) 84, 89
University of Naples.....(1900) 81
Meharry Medical College.....(1904) 82, 85; (*) 81
Maryland Medical College, (1904) 75, 77, 78, 79, 81, 81, 83, 89
Harvey Med. Coll., Chicago.....(1898) 79
Birmingham Med. Coll.....(1904) 94, 94, 96
Atlanta College of P. and S.....(1902) 88, (1904) 91, 93
University of Michigan.....(1903) 81
College of P. and S., Chicago.....(1898) 91
University of the South.....(1904) 85
Louisville Medical College.....(1903) 75, (1904) 82
Eclectic Med. Inst., Cincinnati.....(1902) 76
Georgia Coll. of Med. and Surg.....(1894) 76
Georgia Coll. Ecl. Med. and Surg.....(1904) 96
Leonard Medical College.....(1904) 89
University of Pennsylvania.....(1904) 90
Louisville Medical College.....(1903) 89
Illinois Medical College.....(1904) 78
University of Texas.....(1904) 81
Undergraduates.....76, 76, 79, 79

*Year of graduation not given.

FAILED.

Tulane University.....(1904) 73
University of Michigan.....(1904) 52
Medical College of Alabama.....(1904) 67
Eclectic Med. Coll., Atlanta.....(1904) 74, 50
Chattanooga Med. Coll.....(1903) 73, (1904) 54
University of Tennessee.....(1903) 73
Howard Medical College.....(1903) 72, (1904) 72
Louisville Hosp. Med. Coll.....(1904) 65
Maryland Med. Coll.....(1904) 51
Undergraduates.....69, 60, 58, 71, 74, 69, 73, 63, 54

The general average of all representatives of the Medical College of Alabama who passed was 86.2; of Tulane University, 86.2; of Chattanooga Medical College, 82.6; of University of Nashville, 81.5; of Memphis Hospital Medical College, 81.9.

Arizona January Report.—Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, Jan. 2-4, 1905. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 80. The total number examined was 15, of whom 12 passed and 3 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Barnes Medical College	(1900)	80.5
Jefferson Medical College	(1903)	85
University of Iowa	(1900)	92
Illinois Medical College	(1901)	80
Cornell University	(1903) 89, (1904)	88
American Medical Missionary College, Chicago	(1901)	94
Bennett Medical College	(1895)	80
University of Southern California	(1904)	85, 81.6
College of P. and S., New York	(1888)	80.5
College of P. and S., Ontario	(1903)	89

FAILED.

Illinois Medical College	(1901)	65.5
College of Medicine and Surgery, Keokuk	(1889)	50.6
Michigan College of Medicine and Surgery	(1902)	44

Association News.

Yellowstone Park—Portland Special.

A sufficient number have indicated their desire to take in the Yellowstone Park on the way to the next session of the American Medical Association at Portland to warrant engaging the park for the party. As indicated last week, the number will be limited to 250, and it will be well for those who intend to go to send in their names as early as possible. Mention of this special was made editorially in THE JOURNAL, January 28, and under "Association News" in last week's issue. Further information in regard to this and other trips will be published week by week as information reaches this office.

Bill to Incorporate the American Medical Association.

On February 2 Senator McComas of Maryland introduced in the senate the bill to incorporate the American Medical Association (S. 7040). It was read twice by its title and referred to the committee on the judiciary, which is composed of Messrs. Platt of Connecticut (chairman), Clark of Wyoming, Fairbanks, Nelson, McComas, Depew, Mitchell, Spooner, Bacon, Pettus, Culberson, Blackburn and Patterson. The introduction of the bill in the House was mentioned in THE JOURNAL, January 21, p. 227. The bill, therefore, is in both the Senate and the House.

The Senn Prize Essay.

The committee on the Senn Medal begs leave to call attention to the following conditions governing the competition for this medal for 1905: A gold medal of suitable design is to be conferred on the member of the American Medical Association who shall present the best essay on some surgical subject. The award will be made under the following conditions: (*a*) The name of the author of each competing essay must be enclosed in a sealed envelope bearing a suitable motto or device, the essay itself bearing the same motto or device. The title of the successful essay and the motto or device is to be read at the session at which the award is made, and the corresponding envelope is to be then and there opened and the name of the successful author announced. (*b*) All successful essays become the property of the Association. (*c*) The medal shall be conferred and honorable mention made of the two other essays considered worthy of this distinction, at a general meeting of the Association. (*d*) The competition is to be confined to those who, at the time of entering the competition, as well as at the time of conferring the medal, shall be members of the American Medical Association. (*e*) The competition for the medal will be closed on, and no essays received after, April 1, 1905. Communications may be addressed to any member of the committee, which consists of the following: Dr. James E. Moore, chairman, 704 Pillsbury building, Minneapolis; Dr. M. L. Harris, 100 State Street, Chicago; Dr. Floyd McRae, Atlanta, Ga.

NEW MEMBERS.

List of members for the month of January, 1905:

ALABAMA.

Mason, F. H., Brewton.
McDowell, Wm. P., Eufala.

ARIZONA.

Purcell, W. B., Tucson.
Rodgers, M. A., Tucson.

ARKANSAS.

Alexander, Frank Stan, Houston.
Baker, J. P., Morrell.
Counts, G. D., Wesley.
Hardin, A. E., Fort Smith.
Jordan, J. F., McNeil.
King, Marion N., Texarkana.
Moore, W. A., Hindsville.
Martin, J. E., Hindsville.
Neighbors, G. G., Warm Springs.
Paddock, C. B., Fayetteville.
Rieff, W. L., Perryville.
Stark, C. B., Little Rock.
Throgmorton, H. L., Pocahontas.

CALIFORNIA.

Anthony, R. Seldon, Fresno.
Burlew, Jesse M., Santa Ana.
Brink, H. O., Lakeport.
Blake, Wm. F., San Francisco.
Bertola, Mariana, San Francisco.
Benton, Julian J., Berkeley.
Bates, Homer O., Long Beach.
Brennan, T. F., San Francisco.
Clark, J. Emmet, Alameda.
Clark, John Ingram, Santa Ana.
deChantreau, J. D., San Francisco.
Day, Robt. V., Los Angeles.
Dawley, Chas. G., Los Angeles.
Franch, Chas. E., San Francisco.
Gerson, T. P., Los Angeles.
Hubbell, Geo. R., San Francisco.
Hull, Leonard C., Hollister.
Hastings, Hill, Los Angeles.
Inman, Thomas G., San Francisco.
Lartigau, August Jerome, San Francisco.
Leith, H. Ovonder, San Francisco.
Moulton, D. H., Chico.
Medlock, James Randolph, Santa Ana.
Moore, E. C., Los Angeles.
McCue, James Edw., San Francisco.
Ophuls, William, San Francisco.
Perry, C. D., Fresno.
Plymire, A. G., South San Francisco.
Pryor, F. O., Scotia.
Phelan, Henry R., San Francisco.
Robarts, H. P., San Francisco.
Rankin, J. E., Gonzales.
Reed, J. D., Covina.
Ritchie, A. M., Pacific Grove.
Shurtleff, F. C., Los Angeles.
Spalding, Alfred B., San Francisco.
Smith, R. K., San Francisco.
Thorpe, Lewis Sanborn, Los Angeles.
Thompson, Allen Milo, Sonoma.
Witter, G. F., San Jose.
Wilson, A. P., Los Angeles.
Wernigk, R., Los Angeles.

COLORADO.

Dyde, Charles B., Greeley.
Foster, W. C., Gulch.
Haggart, J., Durango.
Lathrop, H. R., Como.
Monroe, Duncan Daniel, Hillrose.
Midgley, Arthur E., Denver.

CONNECTICUT.

Beebe, George H., Guilford.
Dumortier, Jean, So. Norwalk.
Glynn, D. L., Portland.
Robinson, Paul S., New Haven.
Stanton, T. Francis, Bridgeport.
Turner, Arthur Robert, Norwalk.

DISTRICT OF COLUMBIA.

Heller, Joseph M., Washington.
Karpeles, S. R., Washington.
McLean, N. T., Washington.
Nichols, J. B., Washington.
Stitt, E. R., Washington.
Stromberger, Henry H., Washington.
Seibert, E. G., Washington.

FLORIDA.

McKee, W. P., Eustis.

GEORGIA.

Alexander, Geo. L., Forsyth.
Buxton, T. A., Girard.
Gostin, B. S., Macon.
Jeffords, H. M., Sylvester.
Tankersley, J. S., Ellijay.

IDAHO.

Cooper, A. J., Nez Perce.
Louis, J. D., Saint Anthony.

ILLINOIS.

Anderson, H. V., Westfield.
Brown, J. Archibald, Kankakee.
Burtt, A. S., Momence.
Benson, John P., Joliet.
Barton, Francis W., Danville.
Culter, F. O., Gibson City.
deTarnowsky, George, Chicago.
Ehle, C. E., Quincy.
Fitzpatrick, M. W., Decatur.
Fowler, J. V., Chicago.
Fantus, Bernard, Chicago.
Herzog, A. E., Ottawa.
Hedger, Caroline, Chicago.
Hartman, A., Chicago.
Hill, Chas., Chicago.
Hall, Geo. W., Chicago.
Holby, Chas. O., Chicago.
Ingalls, Frank M., Highland Pk.
Isaacs, L. J., Chicago.
Johnson, R. P., Chicago.
Jones, Walter C., Chicago.
Knox, William T., Manchester.
Kingsley, V. C. T., Danville.
Kurtz, Charles J., Chicago.
Kell, A. P., Kell.
Lovell, John Gibbs, Chicago.
McRoberts, Wm. A., Joliet.
Miller, David Warren, Gilman.
McCormick, Franklin L., Carthage.
Milligan, Geo. W., Edinburg.
McComas, George U., New Canton.
Munch, Louise L., Joliet.
McDonald, James T., Mattoon.
Miller, A. Merrill, Danville.
Malcolm, Janet, Chicago.
Mowry, A. E., Chicago.
McGown, Jno. D., Chicago.
Pollock, Arthur D., Rushville.
Porter, F. D., Chicago.
Rivard, Geo. J., Assumption.
Rhodes, S. Ora M., Bloomington.
Richter, Arthur J., Chicago.
Scheve, Elmer F., Mascoutah.
Servass, A. G., Havana.
Schoennesholfer, Wm., Lostant.
Smith, J. W., Cutler.
Smith, Orman E., Bushton.
Taylor, J. B., Bloomington.
Volght, C. B., Mattoon.
Wray, Austin L., Alexis.
Whitlock, C. E., Columbus.
Weir, Chas. F., Chicago.
Wassall, Joseph W., Chicago.

INDIANA.

Abel, O. E., Modoc.
Bird, Joseph E., New Albany.
Birchfield, James William, Guilford.
Berkley, A. L., Rensselaer.
Bulla, Joseph M., Richmond.
Courtney, Thomas E., Indianapolis.
Cluthe, Wm., Tell City.
Carter, Laura, Shelbyville.
Collins, C. C., Roachdale.
Coleman, Walter H., Evansville.
Duncan, Wm. F., Manchester.
Gardner, Lucy Woodward, Bloomington.
Hinkle, E. I., Goldsmith.
Hoggett, W. W., French Lick.
Hunter, F. S., Bedford.
Moroney, James H., Winchester.
McKee, Charles E., Dublin.
MacCammon, J. W., Laurel.
Poland, Ulysses G., Muncie.
Revis, George, Lafayette.
Robinson, George M., Loogootee.
Rose, Bishop A., Linton.
Roark, Charles A., Milton.
Reynolds, O. M., Clayton.
Shanklin, E. M., Hammond.
Schneider, A. L., Fort Wayne.
Spoor, John Sellers, Brooklyn.
Walters, C. R., Paxton.
Walter, Frederick J., Kramer.
Ward, Jno. P., Vevay.
Wybourn, D. C., Sheldon.

INDIAN TERRITORY.

Callaway, James R., Paul's Valley.
Martin, A. E., Marietta.

IOWA.

Choate, Cora Williams, Marshalltown.
Heald, Clarence L., South English.
Huffman, F. G., Gowrie.
Lambert, E. J., Ottumwa.
Lord, Frederic P., Iowa City.
Maxwell, J. P., Clearfield.
Pascol, M. D., Ottumwa.
Rennison, Allen Geo., W. Union.
Stoker, Wm. B., Hawarden.
Torpey, J. F., New Hampton.

KANSAS.

Axtell, J. T., Newton.
Algie, Robert, Linn.
Dykes, J. B., Lebanon.
Dykes, H. A., Lebanon.
Mason, E. G., Cawker City.
Riley, B. R., Coyville.
Taylor, N. J., Berryton.

KENTUCKY.

Agnew, C. L., Harrodsburg.
Anderson, W. H., Louisville.
Avritt, Beauford E., Bradfordsville.
Barber, J. L., Pembroke.
Barnhill, Jno. W., Owensboro.
Beard, J. H., Livermore.
English, Jno. Morris, Elizabethtown.
Erkiletian, Dickson H., Laytonsville.
Gore, R. C., Lone Oak.
Griffith, Daniel M., Owensboro.
Jackson, Jno. D., Danville.
Lee, F. W., Boxville.
Morrison, J. Rowan, Louisville.
McGary, J. R., St. Mary's College, St. Mary.
Mahoffey, J. A., Sturgeon.
Orendorf, Henry, Louisville.
Pack, John E., Georgetown.
Smith, Wm. Hereford, Lexington.
Scholl, Joel Buford, Jabez.
Sauter, Chas., Louisville.
Sublette, S. O., Mortonsville.
Travis, D. J., Eddyville.
Turner, Thomas H., Owensboro.

LOUISIANA.

McConnico, C. V., Kentwood.
Purnell, Millard R., Shreveport.
Willis, D. O., Leesville.
White, Ernest A., New Orleans.

MAINE.

Burr, Chauncey Rea, Portland.
Cochrane, Jasper Duncan, Saco.
Horr, Jacob L., Westbrook.
Lombard, Herbert A., Bridgton.
Littlefield, J. G., S. Paris.
Miller, Geo. W., Kennebunkport.
Milliken, Walter S., Madison.
Nichols, Jno. W., Farmington.
Prescott, Harry L., Kennebunkport.
Smith, Thos. P., Westbrook.
Stanhope, Alvin H., Dover.

MARYLAND.

Boyer, H. R., Accident.
Cole, Rufus I., Baltimore.
Cohen, Lee, Baltimore.
Emerson, Charles P., Baltimore
Hedges, H. S., Brunswick.
Mitchell, H. Arthur, Elkton.
Mullinix, Elisha E., Urbana.
Nalley, Harry, Accokeek.
Pennington, Jno. I., Baltimore.
Pound, Jno. C., Baltimore.
Sprecher, Daniel B., Sykesville.
Thornton, Jessie M., Baltimore.
Todd, M. L., Baltimore.
Todd, Geo. W., Salisbury.
Wegefarth, Geo. C., Baltimore.
Waters, Mary A., Baltimore.

MASSACHUSETTS.

Andrews, E. A., Newton Centre.
Blake, Allen Hanson, N. Cambridge.
Bailey, W. T., Boston.
Bond, W. L., W. Somerville.
Crowley, J. F., Adams.
Chase, Richard Fitch, Boston.
Drury, D. W., Lowell.
Donoghue, Jno. Joseph, Clinton.
Draper, Alexis L., Boston.
Dwyer, Jno. E., Cambridge.
Edmonds, Louis, Harwich.
Ely, Richard S., W. Townsend.
Fuller, Frederick H., Walpole.
French, C. E., Lowell.
Greenough, R. B., Boston.
Howe, J. D., Cheshire.
Haskell, Harris B., Auburndale.
Howland, Clarence E., N. Dartmouth.
Hurd, W. W., Adams.
Keene, Chas. H., Lowell.
Mead, Louis Guy, Boston.
McCarthy, T. F., Marlboro.
Markham, E. W., Lee.
Martin, Jno. M., Boston.
Norwood, E. W., Spencer.
Norris, Albert Perley, Cambridge.
Parker, Harry Caldwell, Boston.
Patterson, William Francis, Charlestown.
Smyser, Chas. J., Harwich.
Saunders, J. H., Brookline.
Warren, Henry Stanley, Boston.
Withington, Alfreda B., Pittsfield.
Wilbur, Hubert G., Fall River.

MICHIGAN.

Bruegal, Oscar A., Agricultural College.
Carroll, M. A., Ludington.
Daudna, J. F., Lake City.
Duguid, Lee H., Custer.
Fox, Jno. W., Orion.
Gregg, Wm. T. S., Calumet.
Godfrey, A. T., Holland.
Howell, M. L., Hastings.
Johnson, J. H., Midland.
Lawton, D. G., Cheboygan.
Livingston, G. M., Manistique.
Martin, Adelbert W., Howard City.
Olmsted, Stephen G., Kawkawlin.
Quick, P. H., Olivet.
Quick, Paul A., Muskegon.
Rowley, James Arthur, Durand.
Snyder, John, Mecosta.
Sprague, Frederick P., Wyandotte.
Sleight, R. D., Battle Creek.
Savage, A. E., Gowen.
Vernier, Jean A., Detroit.
Whitney, W. A., Big Rapids.
West, Arthur Eddy, Eaton Rapids.

MINNESOTA.

Aurness, P. A., Minneapolis.
Bendeke, Karl, Minneapolis.
Green, Eugene K., Minneapolis.
Hughes, Helen, Mankato.
Henry, Clufford E., Minneapolis.
Lewis, J. Davidson, St. Paul.
Livingstone, J. L., Wells.
Morell, Harry, Litchfield.
Mee, P. H., Gaylord.
Olson, O. Hansteen, Erskine.
Reineke, G. F., New Ulm.
Rogers, G. M. F., Buffalo.
Thomas, David Owen, Minneapolis.
Van Slyke, Chas. A., St. Paul.

MISSISSIPPI.

Anderson, Wm. C., Forest.
Donaldson, J. S., Algoma.
Flowers, H. J., Kilmichael.
French, J. C., Natchez.
Grady, William Jackson, Mettleton.
Hughston, W. L., Red Banks.
Henderson, J. W., Lyon.
Moody, W. E., Lake.
Rainey, P. T., Cascilla.
Williams, H. G., Mt. Carmel.
West, H. H., Gulf Port.

MISSOURI.

Apperson, Edwin L., St. Louis.
Ashley, John, Bloomfield.
Briney, E. A. P., Bloomfield.
Balsley, J. A., Kansas City.
DeLorme, Homer A., St. Louis.
Eure, J. B., Brookfield.
Goldman, Max, Kansas City.
Hammer, Marshall D., Bertrand.
Jacobs, Benj., Kansas City.
McClanahan, John M., Guilford.
Maynard, Geo. K., Hitt.
Pitney, Orville, Forest Green.
Platter, A. E., Memphis.
Rosebraugh, F. H., St. Louis.
Staats, Ethan F., Beaman.
Webster, Chas. L., Trenton.

MONTANA.

Lees, A. T., Whitefish.
Sullivan, J. B., Butte.

NEBRASKA.

Emerson, A. G., Lewiston.
Fitzsimmons, A. P., Tecumseh.
Hauser, Byron B., Hooper.
Hall, Byron W., Bennington.
Lucas, Charles, Shelton.
Moriarty, P. C., Omaha.
Rork, L. Wallace, Oxford.
Singer, Harold Douglas, Omaha.
Slusser, F. B., Greenwood.
Thurston, E. D., Burwell.
Van Keuren, Jno., Fullerton.

NEW HAMPSHIRE.

Brownrigg, A. E., Nashua.
Gilman, L. L., Rochester.
Jones, E. E., Colebrook.
Johnson, Francis E., Erving.
Knowlton, Jno. G. W., Exeter.
Little, C. S., Laconia.
Russell, Julia Wallace, Concord.
Taylor, Herbert Leonel, Portsmouth.

NEW JERSEY.

Adsit, N. H., Succasunna.
Burt, N. Howard, Ocean City.
Barrington, R. C., Mount Holly.
Cater Douglas Aymar, East Orange.
Clark, A. Schuyler, New Brunswick.
Hunt, Ralph H., E. Orange.
Hetherington, William, Jersey City.
Hughes, Frederick J., Plainfield.
Lawrence, I. Alfred, Elizabeth.
Leyenberger, S. B. Whitman, Newark.
Menk, Paul E., Newark.
Pechin, Edward C., Camden.
Simpson, Maxwell S., Middle Valley.
Staehlin, Edward, Newark.
Traub, Paul, Bordentown.

NEW MEXICO.

Clarke, S. C., Madrid.
Fest, Francis T. B., Las Vegas.
Radcliffe, Wm. D., Belen.

NEW YORK.

Aronson, M., New York City.
Blanchard, Geo. W., Highland Falls.
Belt, Henry, New York City.
Branth, J. H., New York City.
Bauer, Frederick E., New York city.
Friedman, Sam'l, New York City.
Foerster, F., New York City.
Hoving, Johannes, New York City.
Laidlaw, Frank W., Hurleyville.
Mayne, Henry H., Lockport.
Ochs, Benjamin, New York City.
Price, Norman W., Niagara Falls.
Sohmer, A. E., Buffalo.
Schneider, L. H. A., New York City.
Stocker, Geo. B., Buffalo.
Wilkins, E., New York City.
Ybarra, A. M. Fernandez, New York City.

NORTH DAKOTA.

Brustad, L. A., Park River.
Thompson, Roy C., Wilton.
Thelen, Wm. P., Carpio.

OHIO.

Bauer, Arthur C., Cincinnati.
Caris, T., Lykens.
Carney, A. C., Eldorado.
Faller, Albert, Cincinnati.
Gillette, A. E., Cincinnati.
Graefe, W., Sandusky.
Hall, Edward M., Delaware.
Harpster, C. M., Toledo.
Love, Wesley, Higginsport.
Langholz, H., Oak Harbor.
Miller, Jno., Cincinnati.
Osburn, C. W., Samantha.
Roebuck, Linn L., Richwood.
Sturgiss, A. G., Lower Salem.
Shirey, O. M., Cleveland.
Stix, Walter Henry, Cincinnati.
Schuffell, Harry M., Canton.
Soyer, Geo. P., Cleveland.
Smith, Frank, Lovett.
Tucker, N., Mt. Gilead.
Thomas, J. J., Cleveland.
Ward, Joseph, Cortland.

OKLAHOMA.

Cullum, Arthur B., Hennessey.
Clark, Fred H., El Reno.
Colby, Geo. Biscoe, Cloud Chief.
Hartford, Jno. S., Colony.
Kerley, James W., Cordell.
Pungardt, A. H., Cordell.
Sherburne, Alberto M., Cordell.
Tidball, Wm., Sentinel.

OREGON.

Herdien, Elmer F., Baker City.
Klopper, Henry, Kerby.
Parker, Ivan B., Grants Pass.
Smith, W. Carlton, Salem.

PENNSYLVANIA.

Anderson, Geo. R., Easton.
Adams, Charles T., Philadelphia.
Anders, J. Wesley, Philadelphia.
Beardwood, Matthew, Philadelphia.
Boyle, P. F., So. Bethlehem.
Dodson, Boyd, Wilkesbarre.
DeMuth, Jesse Smith, Grafton.
Dale, David, Currensville.
Ewing, G. J., Washington.
Eaton, Paul, Wilkinsburg.
Evans, Geo. O., Uniontown.
Falkowsky, Chas., Scranton.
Frey, Lewis, Scranton.
Faddis, Thomas M., Charlerol.
Graves, C. T., Monongahela City.
Hirsch, Charles S., Philadelphia.
Hosmer, Chas. M., Philadelphia.

Highley, Geo. E., Conshohocken.
Hausman, William A., Sr., Allentown.
Hubley, B. F., Norristown.
Hertzog, Chas. H., Pittsburg.
Heller, S. H., Lancaster.
Hartzell, R. K., Allentown.
Harris, Amos J., Helfertown.
Jordan, Henry D., Philadelphia.
Kirk, Geo. B., Kylertown.
Knowles, Frank Crozer, Philadelphia.
Laird, J. Packard, Devon.
Liggett, Samuel J., Philadelphia.
Mollmann, Rudolph C., Philadelphia.
Macfarlane, Catharine, Philadelphia.
Mann, Enos S., Dallastown.
Merrick, Geo. E., Genesee.
Noecker, Chas. B., Scranton.
Nesbit, Jno. C., South Burgettstown.
Otto, C. J., Allentown.
Price, Geo. E., Philadelphia.
Parker, Frank C., Morristown.
Pownall, Elmer E., Richboro.
Schumann, E. A., Philadelphia.
Scholler, C. W., Philadelphia.
Shimer, Sterling D., Easton.
Shope, Jacob W., Harrisburg.
Smith, John Green, Philadelphia.
Schamberg, Morris I., Philadelphia.
Shields, M. J., Scranton.
Schoffstall, Joseph Wellington, Sunbury.
Schultz, C., Danville.
Walter, J., Lebanon.
Welder, Henry S., Philadelphia.
Warmuth, M. P., Philadelphia.
Weeks, Albert, Phoenixville.
Wolff, W. E., Arendtsville.

PHILIPPINE ISLANDS.

Dudley, Frank Wilburn, San Fernando, Pampanga Province, Luzon.
Thomas, Jerome B., Jr., Baguio Benguet.

RHODE ISLAND.

Kennon, C. E. V., Providence.
Lovewell, H. P., Providence.
Miller, Albert H., Providence.

SOUTH DAKOTA.

Clauser, G. A., Bridgewater.
Jennings, R. D., Hot Springs.
Kalayjian, D. S., Parker.

TENNESSEE.

Erwin, W. T., Erwin.
Love, C. T., McLemoresville.
Lowry, Jas. B., McCays.
Peete, Edwin Morris, Memphis.
Roberts, T. M., Sweetwater.
Smith, J. H., Trimble.
Sevier, Jno. H., Brownsville.
Williams, Jno. P., Ravenscroft.

TEXAS.

Ahlers, O. C., Sherman.
Burditt, J. B., Brenham.
Beckmeyer, J. F., Hondo.
Bryan, O. J., Park.
Cantrell, C. E., Greenville.
Carter, Thomas Jay, League City.
Callan, G. P., Hasse.
Dobbs, J. C., Ganado.
Finney, William D., Wrightsboro.
Farrington, J. B., Chillicothe.
Fowler, Bradley A., Brownwood.
Fowler, Davis D., Paint Rock.
Greenwood, Jas., Jr., San Antonio.
Hanks, M. L., Barry.
Harral, Whitefield, Dallas.
Harris, R. A., Pleasant Grove.
Howard, Elmer M., Batesville.
Honeycut, Joseph B., Hookerville.
Hutchinson, G. W., Ebony.
Hearn, R. E., Mabank.
Jenkins, G. H., Howard.
Justice, A. L., El Paso.
Kruger, F. R., Galveston.
Kusch, L., Pottsboro.
Lemmon, W. N., Commerce.
Leach, Elisha, Galveston.
Lowry, Stanley T., San Antonio.
McCall, J. G., Brady.
McCracken, Joe Hill, Mineral Wells.
Miller, Felix P., El Paso.
Nibling, G. W., Miles.
Parks, J. M., Elkhart.
Phenix, N. J., Colorado.
Paxton, J. H., Elkhart.
Pedigo, H. B., Dearborn.
Proctor, T. K., Sulphur Springs.
Robertson, H. W., Waelder.
Reagan, W. H., Channing.
Simmons, D. H., Southmayde.
Sadler, Jos. G., Henderson.
Smith, I. S., Burgess.
Thornton, Charles W., Channing.
Thomas, E. M., Georgetown.
Walcott, H. G., Dallas.
Washburn, W. R., DeSoto.

UTAH.

Bickford, Frederick D., Salt Lake City.
Snyder, C. C., Salt Lake City.

VERMONT.

Arnold, Francis J., Burlington.
Bidwell, Geo. S., Waterbury.
Couter, G. O., Burlington.
Dalton, Chas. F., Burlington.
Gregg, J. W., Brattleboro.
Heidel, L. A., Rutland.
Johnson, C. K., Burlington.
Johnson, Robert W., Burlington.
Miner, R. H., Rutland.
Stone, B. H., Burlington.

VIRGINIA.

Burns, Oliver S., Lebanon.
Baptist, H. L., Ivy Depot.
Call, Manfred, Richmond.
Cottingham, G. R., Remington.
Delaney, Martin D., Alexandria.
Field, M. C., Independence.
Jett, E. T., Fredericksburg.
Osborne, J. D., Petersburg.
Ruffin, Kirkland, Norfolk.
Robbins, Chas. R., Richmond.
Taliaferro, B. L., Richmond.
Tompkins, J. Edwards, Fredericksburg.

WASHINGTON.

Austin, A. S., Aberdeen.
Hathaway, Jno. R., Everett.
Nelms, M. A., Walla Walla.
Reed, Connor O., Bellingham.
Russell, Montgomery, Seattle.
Thompson, J. D., Winlock.
Tripp, Geo. A., South Bend.
Yarnell, Silas, Spokane.

WEST VIRGINIA.

Dupuy, E. S., Parral.
Few, S. D., Parsons.
Riggs, C. W., Cameron.
Shawkey, A. A., Charleston.
Varner, H. V., Clarksburg.

WISCONSIN.

Bayer, Wm. H., Gleason.
Butler, F. E., Menomonie.
Denham, Jno. F., Downsville.
Gordon, W. A., Jr., Oshkosh.
Haddy, G. H., Park Falls.
Lothrop, Charles Arthur, Wautoma.
MacDonald, Ed., Cuba City.
Meyst, Chas. H., East Troy.
Muenzer, Richard Jno., Allenton.
Morse, E. A., Appleton.
Merritt, W. D., Janesville.
May, J. V., Red Granite.
Ruhland, G. C., Milwaukee.
Rowles, J. A., LaCrosse.
Ribenack, Geo. A., Menomonie.
Sleicher, J. M., Watertown.
Steves, Bert J., Menomonie.
Stubenvell, Carl E., Oshkosh.
Thayer, C. E., Markesan.

The Public Service.

Army Changes.

Memorandum of changes of station and duties of medical officers, U. S. Army, week ending Feb. 4, 1905:

Brechemin, Louis, Jr., asst.-surgeon, reports as on temporary duty as examiner of recruits, San Francisco since Jan. 18, 1905.

Owen, William O., surgeon, ordered to proceed from Fort Logan, Colo., to U. S. Army General Hospital, Presidio of San Francisco for treatment.

Girard, A. C., asst.-surgeon, granted thirty days' leave of absence with permission to apply for thirty days' extension.

Torney, George H., deputy surgeon general, ordered in addition to present duties, to take charge of chief surgeon's office, Department of California, during leave of the latter.

Hoff, John Van R., asst.-surgeon general, promoted colonel, to date from Jan. 19, 1905.

Davis, William B., deputy surgeon general, promoted lieutenant-colonel, to date from January 19, 1905.

McCulloch, C. C., Jr., surgeon, promoted major, to date from Jan. 19, 1905.

Halliday, Francis A., contract surgeon, left World's Fair grounds, St. Louis, January 27, for his proper station, Fort McPherson, Ga.

McMillan, Clemens W., contract surgeon, returned to duty January 26, at Fort Terry, N. Y., from leave of absence.

Whinnery, Jean C., dental surgeon, ordered from Vancouver Barracks, Wash., to Forts Walla Walla and Wright, for temporary duty.

Adair, George F., contract surgeon, left Fort Wadsworth, N. Y., February 2, on two months' leave of absence.

Navy Changes.

Changes in the medical corps, U. S. Navy, for the week ending Feb. 4, 1905:

Miller, J., Jr., asst.-surgeon, detached from duty with marines on the Isthmus of Panama and ordered to the *Boston*.

McDonnold, P. E., P. A. surgeon, detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to the Naval Dispensary, Washington, D. C.

Webb, U. R., asst.-surgeon, ordered to the Bureau of Medicine and Surgery, Navy Department.

Elmore, B., A. A. surgeon, appointed A. A. surgeon from Jan. 24, 1905.

Ross, John W., medical director, retired, detached from duty under the Isthmian Canal Commission.

Smith, R. K., surgeon, detached from the Naval Recruiting Station, San Francisco, resignation accepted, to take effect February 28.

Means, V. C. B., surgeon, detached from the Naval Hospital, Philadelphia, and ordered to duty at the Naval and Marine Recruiting Station, San Francisco.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service, for the seven days ending Feb. 1, 1905:

Brooks, S. D., surgeon, placed on waiting orders effective January 27.

Magruder, G. M., surgeon, granted extension of leave of absence for thirty days from January 22 on account of sickness.

Rosenau, M. J., P. A. surgeon, one day's leave of absence, Jan. 28, 1905, under Paragraph 189 of the Regulations.

Wickes, H. W., P. A. surgeon, granted leave of absence for one day, January 30. To proceed to Philadelphia and report to Surgeon Fairfax Irwin for special temporary duty.

Lavinder, C. H., P. A. surgeon, detailed as inspector of unserviceable property at the Purveying depot, New York.

Gwyn, M. K., P. A. surgeon, granted leave of absence for four months from January 19.

Long, J. D., asst.-surgeon, granted leave of absence for seven days from Dec. 21, 1904, under Paragraph 191 of the Regulations.

Robertson, H. McG., asst.-surgeon, granted leave of absence for six days from February 6.

Frost, Wade H., asst.-surgeon, directed to proceed to Baltimore and report to the medical officer in command for duty and assignment to quarters.

Mullen, E. H., asst.-surgeon, directed to proceed to New York (Stapleton) and report to the medical officer in command for duty and assignment to quarters.

Linley, W. J., A. A. surgeon, Department letter of Jan. 3, 1905, granting leave of absence for thirty days from Jan. 16, 1905, revoked.

Moncure, J. A., A. A. surgeon, granted leave of absence for thirty days from February 1.

BOARD CONVENED.

Board convened to meet at the Marine Hospital, San Francisco, Feb. 1, 1905, for the physical examination of an officer of the Revenue-Cutter Service. Detail for the board: P. A. Surgeon W. G. Stimpson, chairman; P. A. surgeon J. M. Holt, recorder.

APPOINTMENTS.

Dr. Wade H. Frost, of Virginia, commissioned as asst.-surgeon in the Public Health and Marine-Hospital Service.

Dr. Eugene H. Mullen, of Maryland, commissioned as asst.-surgeon in the Public Health and Marine-Hospital Service.

RESIGNATION.

A. A. Surgeon A. C. Fraser resigned, to take effect Jan. 31, 1905.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended Feb. 3, 1905:

SMALLPOX—UNITED STATES.

Arkansas: Jan. 21, Jacksonville, present; Helena, present; Little Rock, present; Lonoke Co., present; McAlmont, present; North Little Rock, present; Pulaski, present; Sweet Home, present; Ward, present; Wrightsville, present.

Illinois, Jan. 21-28, Chicago, 22 cases, 1 death; Danville, 3 cases.

Kansas: Topeka, Jan. 21-28, 1 case.
Massachusetts: Boston, Jan. 21-28, 2 cases.
Mississippi: Gulfport, Jan. 20, 2 cases.
Missouri: St. Louis, Jan. 21-28, 20 cases, 4 deaths.
Ohio: Toledo, Jan. 14-28, 6 cases.
South Carolina: Greenville, Jan. 7-14, 5 cases, 2 deaths.
Tennessee: Jan. 21-28, Memphis, 12 cases, 2 imported; Nashville, 5 cases.

SMALLPOX—FOREIGN.

Brazil: Bahia, Dec. 1-31, 64 cases.
France: Paris, Jan. 7-14, 21 cases.
Great Britain and Ireland: Jan. 7-14, Belfast, 1 death; Dundee, 1 case; Hull, 6 cases; Leeds, 21 cases; London, 1 case; Manchester, 1 case; Newcastle-on-Tyne, 8 cases; Nottingham, 1 case; South Shields, 6 cases, 1 death; Glasgow, Jan. 13-20, 1 case.
Italy: Palermo, Dec. 24-Jan. 7, 31 cases, 6 deaths.
Norway: Christiania, Jan. 7-14, 10 cases.
Russia: Dec. 31-Jan. 7, Odessa, 2 cases; St. Petersburg, 7 cases, 2 deaths; Warsaw, Nov. 12-19, 1 death.
Spain: Cadiz, Dec. 1-31, 3 deaths.
Straits Settlements: Singapore, Dec. 24-31, 30 deaths.
West Indies: Island of Grenada, Dec. 29-Jan. 11, 4 cases.

YELLOW FEVER.

Mexico: Jan. 15-21, Merida, 1 case, 1 death; Tehuantepec, 1 case.
Panama: Panama, Jan. 25, 1 death.

CHOLERA.

Russia: Erivan, Dec. 21-28, 25 cases, 26 deaths.

PLAGUE—INSULAR.

Philippine Islands: Manila, Dec. 3-10, 1 case, 1 death.

PLAGUE—FOREIGN.

Argentina: Santa Fe, Dec. 27, 1 death.
Australia: Townsville, Dec. 9, 1 case.
British East Africa: Port Florence, Jan. 1, 3 cases.
British South Africa: Durban, Nov. 27-Jan. 3, 1 case, 1 death.
Egypt: Dec. 24-31, Port Said, 1 case; Suez, 7 cases, 4 deaths; Tukh, 5 cases, 3 deaths.
Russia: Ural Territory, Dec. 26-28, 35 cases, 35 deaths.

Society Proceedings.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Regular Meeting, held Dec. 14, 1904.

The President, Dr. Roland G. Curtin, in the Chair.

Differential Diagnosis and Treatment of Acute Pelvic Peritonitis Associated with Gonorrheal Salpingitis.

DR. BROOKE M. ANSPACH drew attention to the fact that while acute pelvic peritonitis of gonorrheal origin is best treated expectantly during the acute stage, it occasionally bears a close resemblance to acute appendicitis in which the expectant plan of treatment would be dangerous. The diagnosis is based largely on the mode of onset, the history of the patient and the presence of gonorrhea. Bimanual palpation in an initial attack of acute pelvic peritonitis due to the gonococcus is often negative because of rigidity of the abdominal walls and the slight structural change found early in these cases. After rest in bed, the use of salines, and hot applications to the abdominal wall, the symptoms subside in from three to ten days. At this time examination is painless, the structural lesions are plainly evident and operation should be performed. In case the expectant plan fails and the patient becomes progressively worse no time should be lost in opening the abdomen.

DISCUSSION.

DR. CHARLES P. NOBLE said increased experience led him to expect less from conservatism in gonorrheal salpingitis than formerly. His views regarding operation in acute gonorrheal peritonitis coincided with Dr. Anspach's. He recalled having operated twice in the acute stage; one was a case of diffuse peritonitis; the other, of a large abscess to the left of the sigmoid. Both patients recovered. One case in which the result of conservatism was a good one was that of a young woman who had acquired gonorrhea, and in whom peritonitis resulted in the formation of an extra-peritoneal abscess. He operated in the acute attack, drained per vaginam, and the patient made an excellent recovery. The woman has since married and borne children. Unless the patient is a young woman, it is Noble's rule to take out both tubes, the uterus and ovaries. He has never seen a patient die of gonorrheal peritonitis.

DR. JOHN G. CLARK said that the reason the gonococcus did not produce general peritonitis was because its chief habitat is the mucous membrane. As soon as the gonococcus leaves the fallopian tubes and enters Douglas' cul-de-sac, the peritonitis is merely toxic, due to the toxins of the gonococcus. He believes it unwise to operate during an attack of gonorrheal peritonitis. Illustrative of this he cited a case in which the symptoms had increased in severity and the question arose whether there was simply a gonorrheal peritonitis or involvement of the tubes and ovaries. Operation was done, the tubes and uterus being removed, and the ovaries left. Subsequently the woman developed a large abscess involving the ovary. Opening of the incision and further drainage were necessary. He emphasized the necessity of a close differential diagnosis and the importance of knowing when to wait until the acute attack had passed, and when not to wait but to operate for a more lethal type of infection. Dr. Clark believes in conserving all tissue possible, because the individual who usually contracts gonorrhea is a young woman. He feels that the conservative policy in some instances works splendidly, but in the majority of cases, badly.

DR. EDWARD MARTIN said that his experience in this class of cases in recent years had been only as long as was requisite to transfer the patient to the hands of a competent gynecologist, but that in earlier days he had seen many such cases which had made a prompt recovery under conservative treatment of the acute attack.

The Significance of Abulic Symptoms in Cases of Mental Disease.

DR. ROBERT H. CHASE, superintendent of the Friends' Asylum for the Insane, Frankford, Philadelphia, stated that besides hysteria where it strongly prevails, abulia is common in all forms of nervous and mental disease in which the chief characteristic is a weakening or exhaustion of the mental processes. It is particularly conspicuous in melancholia, dementia præcox, and in the depressive types of general paresis; in some conditions of neurasthenia and psychasthenia; in the intoxication of opium and alcohol, and in the retardation of manic-depressive insanity. He divides it into systematized, localized and general abulia. Under the systematized he gives the abulia of sleep. Among the forms of general abulia was given the intellectual type, in which the trouble lies in a defect of the attention. He spoke of the rôle that attention played in the normal mechanism of the mind, and under the term aprosexia he gave its various defects in disease.

The Advisability of a National Department of Public Health and a Medical Cabinet Officer.

DR. T. H. EVANS said this was suggested by the late Dr. William Pepper. He favors it as a means to centralize and to render more effective the many interests of the country that are medical. The supervision of education of children, so as to suit individual tastes, needs and abilities, is indicated. Physicians ought to control all matters which concern the physiologic welfare of the citizen. The care of criminals, once apprehended by the law, belongs properly to medicine. Colonies for mental and moral degenerates, if established, would materially reduce crime. The physical defects of children should be understood as productive of later immorality, or conducive to it, if suitable education does not intervene. Education and licensing of practitioners of medicine and surgery belong to a central office, whose executive head should have a place in the cabinet of the President.

DISCUSSION.

DR. EDWARD MARTIN thought that the question of education should be a matter of state control. In regard to criminals, imprisonment is not so much a punishment as it is a protection for the rest of the community. Too much leniency has been allowed criminals on a basis of mental defect. The idea of centralization is applicable to the subjects of sanitation and prophylaxis, particularly against contagious diseases.

DR. CHARLES K. MILLS believes that much could be accomplished by the establishment of a central health department of some description. He would be very glad to see the medical profession represented in the cabinet and believed much good

might come from such movement. It might, however, be better if a department of science were created with bureaus of different kinds, including a national bureau of health which would unify methods concerning matters of health in all parts of the country. With such a national organization much might be accomplished in matters of quarantine, the pollution of rivers, the registration and examination of physicians, and such questions as physicians have the first right to consider. Those who have committed crime, if their mental and physical health is a matter of question, should receive that attention which is often not given them both before and after trial and after conviction. Such questions as the care of the insane, the care of epileptics, the commission of crime by the young, would receive more humane attention if there were some method of regulating their consideration, and if that method were, in part at least, national and centralized.

DR. WILLIAM S. WADSWORTH said that questions which should come under the head of such a national executive department are the adulteration of foods, the study of sewage, the protection of life on railroads and in factories, child labor, the importation of hides and such materials, the quality of drugs and patent medicines. He regards as highly desirable the presence of a medical man in the cabinet.

Regular Meeting, held Dec. 28, 1904, at 8:30 P. M.

The First Vice-President, Dr. B. Franklin Stahl, in the Chair.

Food Preservatives and Food Adulteration.

DR. H. W. WILEY, chief of the Bureau of Chemistry of the United States Department of Agriculture, said that the necessity of preserving food in some way had been recognized since man emerged from his savage state. The development of the science of chemistry had placed in the hands of the manufacturer the means of preserving food and the means of matching foods in tints and colors. He believes the education of the public in regard to artificial coloring of foods to be quite as effective as legislation. After Feb. 2, 1905, the food law will require that all food products entering this country artificially colored should bear a label so stating. The material for coloring need not be declared, except when sulphate of copper is used. His advice to food makers is to cease using colors, and especially if the coloring is under suspicion of any kind. Concerning antiseptics he believes that there never should be an antiseptic admitted to foods, except when absolutely necessary, or when ordered by the consumer. There is, he thinks, a legitimate use for sulphurous acid, as employed in the fumigation of dried fruits, and the burning of the sulphur match in wine barrels, but when it is used for preserving a poor wine, and for putting on the market a new wine before it is ripened, its use is unpardonable.

Defects in Pennsylvania Food Legislation.

MR. W. W. SMITHERS said that the laws on this subject now being enforced in Pennsylvania are not the expression of the wishes of the people, and that they result in unnecessary interference with manufacturers and merchants. He advocated the repeal of the Act of 1895 and the enactment of laws based on the preservation of health and protection against fraud. He stated that the office of dairy and food commissioner is unconstitutional; that the existing food statutes are imperfect and open to many just complaints, and that every effort should be made to secure reasonable and adequate legislation on this important subject.

The Evaluation of Evidence as to the Pharmacologic Action of Food Preservatives.

DR. THOMAS LUTHER COLEY stated that as an economic principle it is apparent that a nation of eighty million people could not be fed from the farm to the table or from the local abattoir to the table. There arises the complex problem of transportation of food in an edible condition. The use of chemical preservatives therefore becomes a necessity. Dr. Coley went over the grounds on which these are used, and reviewed the chief objections against their use. The dangers arising from reputably prepared food to which preservatives have been added, he said, are as nothing compared to the dangers from foods having undergone putrefactive changes. A problem of such importance should be settled by medical men and not by a lay jury in courts of law. Legislative enactments should not be made in advance of scientific knowledge. There must be disabuse of the mind of the criminality of intent on the part of reputable manufacturers and a sharp line should be drawn between adulteration and food preservation. The question to be decided is the action of very minute doses of food preservatives over a protracted period. In order to illustrate the faulty interpretations from research work undertaken on a wrong basis, Dr. Coley cited the papers of Pfeiffer, Kionka and Harrington dealing with sulphite of soda. In all these studies the amount of the drug used was higher than that employed for preservative purposes; too great quantities of meat were fed to the animals, and no variety of diet was allowed. Further, the animals were confined, of questionable health in the beginning of the experiments, and the deductions of these authors were not warranted so far as the use of sulphite of soda as a food preservative is concerned.

BUFFALO ACADEMY OF MEDICINE.

Regular Meeting of the Medical Section, held Jan. 10, 1905.

Dr. Allen A. Jones, Presiding.

The Treatment of Pneumonia.

DR. DELANCEY ROCHESTER based his remarks on a series of 201 cases, with 16 deaths, a mortality of 8 per cent. Twenty-five of these cases were under 20 years of age; mortality, 4 per cent. Between 20 and 50, 115 cases, with 6 deaths; over 50, 61 cases, with 9 deaths. Rochester counseled against the early use of digitalis for the purpose of aborting the disease, because once the chill has occurred the disease is well established; and, furthermore, digitalis does not overcome the toxemia. In his opinion the Brand bath meets few of the indications. He does not use anti-pneumococcic serum because as manufactured in this country it is not reliable, and its cost is so high as to be prohibitive, in many cases. Creosote and guaiacol, used in large amounts by mouth and as an inhalation, are toxic and irritate the kidney, hence their use as stimulating diuretics is contraindicated. The nutrition is sustained by milk, raw eggs, plenty of fresh air and sunlight, and boiled or sterilized water. The toxemia is relieved by diuresis—induced by the administration of large amounts of milk and sterilized water; diaphoresis—hot mustard footbaths every four hours; catharsis—calomel followed by a saturated solution of Epsom salts. The mouth should be cleansed often by an antiseptic wash. The heart should be examined as often and as thoroughly as the lungs. It should be stimulated sufficiently early in the disease. For this purpose Rochester recommends strychnin—two milligrams every four hours, increased, if necessary, to four milligrams, every two hours; brandy—because of the ether it contains, and the carbonate of ammonia. To combat the pulmonary congestion, leeches and wet or dry cups are applied to the affected lung. Dry cups should be applied every four to six hours and kept on for one-half hour each time. Rochester has been able to verify, post-mortem, the value of dry cupping. He condemns the use of poultices, ice locally, and the old pneumonia jackets. He uses a light woolen jacket. The application of leeches and the ice bag over the precordium often will prevent a complicating pericarditis. Endocarditis may be combated by the hypodermic administration of nuclein. For the accompanying pleurisy, dry cupping, codein or morphin is given. If there is a pleural effusion, paracentesis is indicated, and empyema demands surgical intervention. In meningitis leeches are applied, sodium bromid is given and lumbar puncture may be done. With an enlarged right heart, frequent small pulse, arrhythmia, dyspnea and cyanosis, the withdrawal of 10 to 16 ounces of blood from the median vein of the forearm will yield results in cases which otherwise

would prove fatal. In severe cases, hypodermoclysis is also of value. For prevention, the stools and urine should be disinfected; the mouth washed, frequently with an antiseptic solution and the sputum destroyed.

DISCUSSION.

DR. TARTARO said he used the antipneumococcus serum prepared by Paul of Naples in three cases, and believes it to be of value. He said that the reason why the profession in this country has not had the good results reported by European physicians is because the serum manufactured here is not a good one.

DR. VAN PEYMA strongly advocated plenty of fresh air.

DR. THOMA saw no reason why strychnin should be used as a heart stimulant instead of camphor.

DR. DEWITT SHERMAN prefers nitroglycerin because of its capillary dilating effect.

DR. BLAAUW expressed himself as being a believer in the efficacy of antipneumococcus serum.

DR. J. ULLMAN stated that he had often noticed the excessive bleeding following the application of leeches. The salivary gland of the leech secretes a substance which prevents the coagulation of the blood at the site of the application of the leech, and it is possible that the beneficial result obtained from such applications is, in part, to be accounted for by the injection into the blood of an anti-agglutinating substance. The Germans have separated a leech extract by crushing the heads of the animals and making an emulsion in glycerin. The good results noted in normal saline hypodermoclysis may be explained by the anti-agglutinating effect of sodium chlorid.

DR. ALLEN JONES deprecated the use of antipyretics because they crippled the heart by their depressant action.

Travel Notes.

AN INTERSEMESTRAL EXCURSION.

LEWELLYS F. BARKER, M.D.
CHICAGO.

(*Continued from page 156.*)

WÜRZBURG.

One of the most deservedly celebrated of the institutions of learning in Germany is the Royal Julius Maximilian University of Würzburg. Especially in medicine and in the natural sciences has this university a fair fame. It would be difficult to conceive of a better place for quiet work, for Würzburg is a small city of less than 80,000 inhabitants, beautifully situated among the vineyards in the valley of the Main, and the medical and philosophical faculties have for years included many of the most distinguished teachers and investigators in Germany. It was here that Emil Fischer did some of his best work on the synthesis of the sugars; it was in the physical laboratory nearby that Roentgen, in the course of his everyday work and in the middle of his otherwise relatively uneventful life, suddenly made that happy observation which set the world agog. The venerable v. Kölliker, who still lives in Würzburg, has given us an account in his autobiography of his own activities there. Boveri, the zoologist, has a world-wide fame; Medicus, Tafel and Manchot are names familiar to every investigating chemist.

The medical faculty is fortunate in having excellent laboratory buildings, beautifully situated on the Pleicher Ring and admirable clinical facilities in the large, well-organized, richly endowed Julius Hospital. Of the 1,400 students in attendance at the university last year, 461 were medical. The subjects of the first two years are extremely well taught, anatomy now under Stöhr's, physiology under v. Frey's, pathology under v. Rindfleisch's and pharmacology under Kunkel's direction.

Professor Stöhr, so well known to us in America through the translation of his admirable text-book, was called to Würzburg from Zürich and inherited the large modern Anatomical Institute from v. Kölliker. When an American enters the huge laboratories built for anatomy in Germany and in Austria, with their capacious and handsomely decorated entrance halls, their wide corridors, roomy amphitheaters, well-lighted dissecting rooms, elaborately organized study rooms and liberally outfitted research rooms for professors, assistants and advanced students, he realizes forcibly the advantages which accrue to the science in a country where for a long time it has been in the hands of men who have devoted themselves exclusively to it, and where it is studied for its own sake as well as taught to medical students as a foundation for their subsequent studies. In single institutions in America anatomy has been similarly recognized, living professorships have been established, adequate laboratories have been built, appropriations for staff and equipment have been made and work of the highest order is being carried on—but, in general, America has yet a long way to go in order to put this fundamental science on a level with that of continental Europe. But American universities and medical faculties seem to be wonderfully alive to the importance and needs of anatomy, and there seems every reason to believe that the excellent example set by a few of the leading institutions will soon be followed by the rank and file. And when this will have taken place, the European anatomists declare that they feel that they will be compelled to look to their laurels.

Stöhr's laboratory, so far as anatomic teaching (aside from research) is concerned, is one of the best organized I have seen. Here, if anywhere, one finds "anatomy made easy." Everything one can think of is done to help the student in his acquisition of the facts of the gross and the microscopic structure of the body. In the dissecting room, in the lectures, in the histologic laboratory, in the study-room and in the museum, no effort is spared that can contribute to the speedy, easy and accurate grasp of the multitudinous form relations which confront the beginning medical student in his study of the human cadaver. The leading principle with Stöhr (as with many modern teachers of anatomy), is that the student shall actually see as many structures as possible himself. And so he demonstrates *ad maximum*. In the lectures, the structures isolated by prosectors, are shown to the class; on the board careful pictures of the more important relations are drawn; on the walls are charts copied from the most accurate illustrations of current atlases. In the study room from day to day special demonstrations are made; special dissections or models of the same are exhibited, each part being ingeniously labelled for the occasion so that confusion of structures or names is scarcely possible; even the Steger models are placed beside life-size photographs of the same, each structure in the photographs being properly characterized by inscription in order to facilitate its recognition in the model.

A similar process of elaborate help is followed in the histologic instruction. With every section given out to the class for study a special demonstration is associated; in this demonstration a slide is placed under the microscope and beside it is a camera lucida drawing of the same field in which each structure has its appropriate legend. These drawings and legends are all controlled so that the student need not doubt their accuracy. In this way a difficulty is obviated—one which every teacher of histology who has had to deal with a large group of young assistants, has more than once keenly felt—I mean that of false instruction. Only too often does one find that a student who has applied to a young instructor for guidance has been led along a wrong path. The conditions in anatomic laboratories are such that young men with insufficient training have to be used as class-room instructors. Nothing is more discouraging to a student, or more likely to lead him to think a subject unimportant, than to find that the man who has been set to teach him can not tell the periphery of a lobule of the liver from its center, or the tractus solitarius from the descending root of the vestibular nerve. Much can be done to avoid the evil by systematic "instruction of the instructors" before the class meets. The real remedy is to furnish better trained instructors, and this will be possible when more money is available, when more men are drawn to the more purely scientific careers in medicine, and when the condi-

tions become such that it will be possible to draw a sufficient number of instructors from a class of men who, beside having done the "required" work for medicine, have had a prolonged course in "non-required" advanced work. One of the things most needed now in American laboratories is provision for advanced anatomic work. The organization of a number of courses suited to those who, having taken the regular courses in anatomy in the medical school, desire to develop themselves more perfectly in the subject, would be hailed with gratitude by many. It should be possible for a gynecologist-in-training, for example, to find a well-planned advanced course on the anatomy of the organs of the female pelvis. Courses on the anatomy of the eye, of the ear, of the nose and throat, also might be especially organized. Such courses are already offered in a few institutions, it is true; but might they not advantageously be introduced in many more places? There is a field also for the working out of advanced courses in general anatomy and histology in which the student could repeat some of the work already done by great anatomic investigators. If anatomic curricula were thus enriched, marked progress ought to be made and real anatomic research should quickly be forwarded —much more rapidly, perhaps, than by setting immature intelligences at so-called "original work."

I have spoken of the immense amount of help given to the students in the department of anatomy at Würzburg. In connection with this and similarly organized laboratories it may be asked: "Is not too much help given? Is there not danger of 'spoon-feeding' there? Is it not true that it is only that which a student acquires with a certain amount of difficulty and personal exertion which he will retain? Does not such a method of instruction make too great demands on the time and energies of the teaching staff? Is it not possible that the research work of the professor and his assistants will suffer in laboratories where teaching is so highly developed?" These are questions which can scarcely be satisfactorily answered offhand; that they should be asked, it must be admitted, is natural. So much depends on the quality of the students to be taught and on the character and ability of the teaching staff, especially of the head of the department in each instance, that no answer can be given which would hold generally. It is probably safe to say that students can not be helped too much, provided they are always helped in the right way, and it is nearly always the right way when they are helped to learn how to help themselves. The sea of anatomy—if I may be permitted to make a time-worn figure do service once again—is too wide and the time for its exploration too short for the student's boat to be permitted to drift aimlessly about on its surface; the teacher must stand beside the student at the helm and teach him how to guide it; he must accompany him into the more important harbors, pointing out to him the best modes of approach, the channels which experience has proved to be the shortest and safest, the landmarks which serve as guides and the hidden dangers which threaten the passage of the novice. It is his duty as quickly as possible to make the apprentice so familiar with the apparatus of the ship, with the use of the charts and the books of other navigators that he may by himself, unattended by an experienced seaman, visit any known anatomic port. He will see that the learner does actually visit and observe all those more important harbors with which every well-trained medical man must perforce be familiar, and he will encourage him to explore thoroughly even the very smallest landing places in some selected region of the body which may especially interest him. For the study of the charts and the descriptions of the voyages of others alone will never make a navigator; the most complete familiarity with anatomic pictures and the most thorough learning by heart of anatomic descriptions can never take the place of personal work in the dissecting room and in the histologic laboratory. If in his training the student learns how many different kinds of vessels may be employed and how variously each may be worked, if he practices charting his different voyages for himself and becomes skilled in the keeping of a brief and accurate log, it should not take him long to acquire that degree of knowledge and skill which will afterwards be sufficient for him in his work. The majority of medical students will never in their subsequent careers make journeys in anatomy outside of charted waters; indeed, practical medicine and surgery has commerce as yet with only a small fraction of the termini to be found on the anatomist's maps, though every day some terminus, hitherto neglected, becomes important. But the good anatomic captain will see to it that his pupil knows which waters are charted and which are not; to impress the facts on the learner he will occasionally make a short trip with him into an unknown bay, feeling his way continuously as he goes, sounding here and calculating there, filling in a new area on the chart or correcting an old one; now and then, his heart will be gladdened when an adventurous spirit turns up in the crew, who, in love with the sailor's life, and not satisfied with repeating the voyages made by others, is fired with the ambition to travel on and on into the unknown—a new anatomist may develop with the strength and courage to lay out his own course.

Professor Stöhr is ably supported by two associate professors, Oskar Schultze and Johannes Sobotta, both of whom are known to American medical men, the latter through his embryologic studies and his atlas of anatomy just published in Lehmann's series. Though Schultze's studies, notably those on the nature and origin of the peripheral nerves, have apparently led him temporarily into false paths, his work as a whole is most promising, and he is generally regarded as one of the very best of the younger school of German anatomists. Sobotta's new atlas, it must be admitted, is somewhat disappointing; moreover, it was scarcely needed, the field being sufficiently filled, for the present at least, by the magnificent anatomic atlases of Spalteholz and Toldt. Men with investigative power are so uncommon that the spending of their time in the unnecessary multiplication of text-books is deplorable.

The department of physiology in Würzburg is now one of the strongest in the institution. Under the direction of von Frey, so long associated with the distinguished Ludwig in Leipzig, this is no surprise. A most painstaking, reliable investigator himself, von Frey has understood how to attract to his laboratory a number of other investigators, among them men who stand in the front rank in contemporary physiologic research. The physiology building is excellently suited to its purpose; the equipment is adequate and the yearly budget relatively liberal. The teaching is carried on by means of lectures and laboratory work, the latter being made a main feature, Professor von Frey having been one of the first to introduce into Germany the admirable methods of practical physiologic instruction which had their origin in the medical schools connected with American universities, and which, among others, Porter of Harvard and Howell of Johns Hopkins have done much to develop and to systematize. Von Frey himself has a leaning toward mathematics and physics; excellently trained in these basal sciences himself, his original researches have enriched physiologic knowledge mainly along physical lines. I need only refer to his exquisitely delicate investigations into the nature of the functions of the sense organs of the skin, including his establishment of the spatial independence of the organs underlying the sensation of pain from those underlying the sensation of touch, and to his many contributions to the methodical and graphic study of the circulatory apparatus, to recall to American physicians the importance of his work.

Mention was made above of the high grade of physiologic investigators who have been attracted to v. Frey's laboratory. The most brilliant, perhaps, of these is the young Englishman, Overton, who, though academic positions have been offered him, prefers to keep himself unentangled from teaching responsibilities in order to devote his undivided attention to the labor of original research. His studies of the mode and action of narcotics, begun with Hans Meyer, the excellent pharmacologist at Marburg, have been most far-reaching in their results. No better example, perhaps, could be brought forward of how work begun on a specific problem in a limited field

may suddenly widen and permit of unexpectedly broad applications. Meyer and Overton began by asking themselves, How do narcotics act? The researches undertaken soon led to the putting of the more general question, How do substances of the most various sorts enter the cells of the body? Any substance, to act as a narcotic, must be able to enter the cells. Overton found that water can enter and leave cells quickly, and that of the organic substances, those penetrate the cells most quickly which, besides being soluble in water, are easily soluble in fats, such as the various fatty oils and certain allied substances like cholesterin, lecithin and protagon. Since the latter substances are known to occur very generally in animal and vegetable cells, it occurred to Overton that it is their presence in the cell which in large part determines the behavior of the cell as regards the reception into it of substances dissolved in the solution bathing it. If this were true, then the distribution of the substance in solution between the lymph on the one hand and the cell on the other will depend on the relation of its solubility in the water of the lymph to that in the fat-like substances in the cell. If the solubility of the substance in the cell fats or so-called "lipoids," be great, it will accumulate there and alter the function of the cell; if it be insoluble in the cell fats but easily soluble in water, it will not easily enter the cell.

An examination of narcotics showed that they could be divided into two great groups, (a) those that are chemically neither acids nor bases, but so-called "indifferent" substances, and (b) basic substances. To the first group, according to Overton's estimate, about one-half of all organic substances belong; the group also includes carbon dioxid, carbon bisulphid and nitrous oxid. When the concentration of the solution of a member of the group sufficient to cause narcosis of a given group of cells has been established, it is found that the same concentration of solution will generally exercise a similar narcotic effect on cell groups of the most various kinds. Further, the narcosis is temporary; when cells are removed from the narcotizing solution and placed in normal lymph or salt solution the narcotic effects quickly disappear and the normal function is restored; only when the concentration has been too great or the action too prolonged is the cell permanently injured.

To the second group of narcotics belong the organic bases and those salt-like compounds of them which on aqueous solution undergo hydrolytic cleavage, with reformation of the base. Ammonia belongs here also, but not solutions of sodium or potassium hydroxid. The nature of the cell membrane, its holding in lipoid substances, determines apparently its impermeability to dissolved electrolytes on the one hand and its easy permeability by substances soluble in fat on the other. The action of the organic bases of this second group of narcotics is wholly different from that of the substances of the first group in that the concentrations effectively narcotic for one group of cells may be totally ineffective for a cell group of a different kind, the concentrations necessary varying in some instances in the proportions of 1 to 10. Further, the action is not temporary, but prolonged, even when the cells are placed again in normal lymph or salt solution. And again, the narcotic effect does not take place so quickly after the penetration of the substance into the cell; it appears more slowly and tends to be progressive in its intensity. The conclusion is drawn that the basic narcotics in all probability form tolerably firm chemical compounds inside the cells with certain of the cell constituents. Though they can penetrate the cells tolerably quickly on account of their solubility in lipoids, they are not easy to remove from the cells, once inside. This, perhaps, explains how it is that so small a quantity as 1/3 of a milligram (1/200 grain) of curarin per kilo of rabbit, as Böhm showed, will suffice by its accumulation in the motor end plates to totally paralyze the skeletal muscles of the body.

The action of the so-called indifferent narcotics appears, on the other hand, to be physical rather than chemical. This view is supported by their lack of specificity of effect, by the relative chemical inertness of most of the narcotics concerned and by the speedy recovery of the cell when its normal environment is restored. The richer a cell variety is in contained fats, the more narcotic it will take up. This explains, perhaps, the affinity of such narcotics for nervous tissues, especially for medullated nerve fibers.

The opportunities for the application of the doctrine to the practical experience of the physician are obvious. One recalls at once the relatively large amount of chloroform or ether an obese patient may require before narcosis is established; with great masses of adipose tissue in the skin and omentum, each fat cell dissolving out of the lymph its store of the circulating anesthetic, a much larger amount of the substance may have to be administered before the effectively narcotic concentration in the lipoids of the nerve cells is attained, than would be necessary in an emaciated patient, where, as is well known, the nerve cells are among the last to yield up their store of fat. It must ever be kept in mind that solubility in fat is not the only factor concerned in connection with the behavior of the indifferent narcotics; just as important is the coefficient of distribution of the substance between lipoid and water. If this coefficient, lipoid water, is great, then the narcotic will penetrate the cell quickly; if it is small, only slowly. The remarkable results of Overton's studies thus far make us look forward with eagerness to his further publications. He is now engaged on a study of the phenomena of imbibition, and we may, therefore, expect before long to have new light thrown on this process, so obscure and yet so important for the function of cells.

Another investigator in v. Frey's laboratory whose results merit close attention is Gurber. His studies of crystallized serum albumin from the horse have assumed especial interest now that chemists as well as physiologists are beginning to concentrate their minds on the problems connected with the nature of the proteid substances.

A new text-book of physiology by Professor v. Frey has just been published.[1] I am wondering if it might not be a good rule for every medical man, no matter what his special branch of work may be, to read carefully every few years the newest and best text-books of physiology as they come out. Physiology stands closer, perhaps, than any other of the so-called fundamental sciences to the practicing physician, to whom its relation is that of anatomy to the surgeon. How many medical men greeted with delight and read with instruction Howell's American Text-Book, Stewart's Physiology, Loeb's Lectures and Schaefer's English Text-Book of Physiology, as they appeared! These books gave us renewed stimulus; in a connected fashion we were able to get a grasp of the progress science had made since our student days. We went back to our daily work with clearer ideas, with a new insight into the processes which go on in those bodies we have to treat. A rational therapy of disturbed function is impossible when the normal activities are not understood; the more sharply the processes which go on in health are stamped on our minds, the less likely are we to go astray in combating disease. This new book of von Frey's can be warmly recommended as a guide for the better class of medical students; as a succinct, interesting epitome of the science as it stands to-day, it should be of the greatest service to the busy practitioner. I wish it could be translated into English.

In less than 400 pages von Frey has brought together the more salient features of modern vertebrate physiology. I say vertebrate physiology, for von Frey is a greater friend of the physiology of higher animals than of that of the protozoa. The two schools of physiologists appear to have difficulty in understanding and fully appreciating one another. But each school has its brilliant representatives, and we as medical men probably do best to neglect the strife of the schools and to assimilate to our own uses the contributions of each. Some day a higher, more philosophical physiology will unify the facts of the science. I have been reading von Frey's book in the

1. Von Frey, M.: Vorlesungen über Physiologie, Berlin (Springer), 1904, pp. I-x and 1-392.

train in those long, lazy intervals between stopping places, so characteristic of European railways. Typical of the book is the opening chapter, which deals at once with the application of the doctrines of the conservation of energy and of mass to the processes which go on in living beings. The student has his physiology presented directly as a continuation, with utilization, of his studies in chemistry, physics and anatomy. The dynamic conception of the body is impressed from the beginning. The modernity of the presentation is made obvious by the use of the cm., gr., sec. system of units; the systematic application of the dyne, the erg and the other members of this system of units to all scientific measurements is now a matter of duty; medicine has been too long blameworthy in this regard.

The original research of von Frey on the circulatory apparatus would lead us to expect that the sections of the book dealing with the blood, the work of the heart and the movement of the blood and lymph will be particularly strong and a perusal of them shows that the expectation is not disappointed. The series of beautiful experiments which physiology owes to Ludwig and his pupils are here successively presented and the results of subsequent investigators are carefully epitomized. The newer studies on the heart muscle and on the action of the valves of the heart can not fail to interest every clinician. The graphic methods for recording the evidences of activity in the various parts of the heart have undergone marked improvement of late. Especially valuable in this connection are the experiments of Einthoven, who registers the heart sounds synchronously with the apex beat. A whole series of new facts and a valuable critique of the older observations have resulted. Still more interesting and probably capable of greater application clinically is the method of studying the activity of the living heart by measuring the electric currents which originate at each beat. The capillary electrometer is the instrument used and the registered curve is known as the electrokardiogram. Some of our better American physiologists now give instruction in the use of the instrument in their practical courses, and it may be hoped that before long it will be more extensively employed at the bedside, especially as a method of correction of the original curves obtained has been introduced which permits one to eliminate the differences between individual instruments.

The section on the study of the pulse is largely an epitome of von Frey's former book on the subject; the three pulse-measuring instruments — sphygmograph, tachograph and sphygmomanometer—for the more accurate valuation of the various characters of the beat, are carefully described; von Frey's own contributions here to the improvement of the instruments are of high worth. The chapter on the vascular tonus will be of especial interest to medical men, now that clinicians are becoming more and more convinced of the vast importance of the condition of the small vessels at the periphery in all cases of disturbance of the circulatory apparatus. The chapter on this subject has been written with great care; the most important facts in a huge literature are given in résumé, and well-selected bibliographic references point the student to original sources of information. The fifth part of von Frey's book, that dealing with respiration, includes an interesting account of the studies of Bohr, who has, as is well known, revolutionized physiologic ideas in that domain during the past few years. Bohr has studied more exactly than had been done before the mode of combination of the oxygen in the circulating blood, and he and his pupils have shown that a fixed relation between the amount of hemoglobin present and the combined oxygen does not exist. His experiments also indicate that the hemoglobin of the circulating blood is a substance, the capacity of which for taking up oxygen is variable within certain limits which are as yet not fully understood. His studies of the compound which carbon dioxid forms with hemoglobin, the so-called carbohemoglobin, have shown that its formation is independent of the simultaneous presence of oxygen, and leads to no alteration of color that can be recognized either by the naked eye or the spectroscope; in all probability, therefore, the carbon dioxid unites with a totally different part of the hemoglobin molecule than that with which the oxygen combines. No less important, perhaps, are the studies of Bohr and Henriques on "internal respiration," through which they have been able to bring forward new facts concerning the exchange of oxygen and carbon dioxid between the blood and the tissues, and especially concerning the exact localization of the combustion processes. The discussion of the significance of the so-called "respiratory quotient" will be welcomed by many, for the clinicians who busy themselves with the study of diseases in which metabolism is markedly disturbed tend more and more to help themselves by calling to their aid the apparatus of Zuntz, or, better, that of Jaquet. It would seem a pity that so many metabolism experiments have had to be carried on, especially in clinical work, in a one-sided way. The measuring of the gas exchange alone suffices no more than a determination of the intake and output of nitrogen alone; but the great practical difficulty of comprehensive metabolic studies and the limited number of adequately trained assistants for the work probably explains the slowness with which progress is made along these lines. It must be pleasing to Americans to realize that thus far the experiments of Atwater are the best that have been made.

The sections of the book dealing with the physiology of digestion, absorption and assimilation are excellent. They could have been written only by one who has followed closely and with understanding the vast number of original researches dealing with the histology of the digestive and absorptive organs, the nature and action of ferments, and the organic and physical chemistry of the decomposition and synthesis of the proteid and carbohydrate substances. The more peculiarly biologic experiments, too, have been fully valued; the researches of Pawlow in Russia and of Cannon in Boston are given due prominence. Knowledge is moving with automobile speed in these districts; it is hard for a scientist to keep pace with it even in a "runabout;" he who will be abreast of everything must, of necessity, ride a "big machine."

The seventh and eighth parts of the book deal with the urine, with metabolism in general and with the maintenance of the body temperature; the remainder of the volume is devoted to a discussion of the functions of the muscles and nerves. Where all is good, it seems invidious to select any part for especial praise; I must state, however, that nowhere else to my knowledge is a better description given in so small a space of the functions of the organs of general and special sense. The central nervous system is dismissed, on the other hand, with a relatively meager account, a behavior for which, however, we can scarcely blame a physiologist when we recall how much of what is ordinarily given on the brain in text-books of physiology is really not physiology but anatomy. An American is somewhat surprised also to find no chapter in the book on reproduction; in Germany this subject is left to the text-books on anatomy. I have written chiefly, as will be seen, of the merits of the book, which seem to me unusual; it is a book which must appeal to those whose wish it is to see medicine brought more and more into accord with the exact sciences. But the book is not devoid of faults; the account given of the white blood corpuscles is defective and should be improved in another edition; there is no discussion of the theory of katalysis in connection with the description of the activities of enzymes, an omission which many will find hard to forgive, especially since the theory as put forward by Ostwald stimulates to important experimental work; and there are misprints here and there which mar the book. I miss, too, any reference to the important experiments of Stoklasa on the relation between the process of "internal respiration" and that of alcoholic fermentation. But these faults are such as can be easily corrected; the book as a whole is excellent and worthy of repeated reading and careful abstracting.

It is interesting to look over the list of names of younger men cited in the book. The names of Germany's former physiologists form a galaxy, in which Brücke, DuBois Reymond, Helmholtz, Ludwig and Weber were among the most illustri-

ous persons. Engelmann, Gad, Hering, Hermann, Hürthle, von Kries, Munk, Pflüger, Rosenthal and Voit are living, but can no longer be regarded as young men. Now we hear of Bethe, Bohr, O. Cohnheim, Cremer, Ewald, Einthoven, O. Franck, von Frey, Tucke, von Grützner, Gürber, Hofman, Kossel, Overton, Schulz, Siegfried, Steinbach and Verworn. Some of these are really not German; Bohr is a professor in Denmark; Einthoven is a professor in Holland; Overton is an Englishman working in Germany. Will the German physiologists of to-day rank with their predecessors, is a question which many are asking. The answer must be left to the future.

In Würzburg, von Leube is the professor of internal medicine. He is everywhere regarded as one of the best diagnosticians in Germany and his text-book on diagnosis has long been used and highly prized by American physicians who read German. I note that the last edition of this useful book has been translated into English by Dr. Salinger; it is certainly matter for congratulation that its contents have now been made generally accessible to English and American readers.

(To be continued.)

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Pneumonia.

The specific organism which is the cause of pneumonia, the *Micrococcus lanceolatus*, can be found in any part of the respiratory passages in normal individuals. In pathologic conditions it finds its way into the blood of patients and in this way gives rise to various complications. Unless the pneumococci, therefore, are found in the sputum in pure culture their presence is of no diagnostic value. In many cases of lobar pneumonia other organisms are present, such as the streptococcus and Eberth's bacillus. The bacillus of influenza may be the etiologic factor in pneumonia; alone it never causes a true lobar pneumonia, but a lobular pneumonia which may be confined to one lobe as shown on autopsy.

PROPHYLAXIS.

The treatment of pneumonia may be divided into the prophylactic treatment and the treatment of the attack. The prophylaxis as recommended in the bulletin of the Department of Health, Chicago, consists in:

1. Destruction of the sputa.
2. Prevention of soiling the patient's surroundings and thorough disinfection of the room afterward.
3. Thorough ventilation.

GENERAL TREATMENT.

H. P. Loomis, in the Practical Medicine Series of Year Books, gives an account of the following general line of treatment of pneumonia in four of the leading hospitals of New York:

Calomel is first given in small doses, often repeated, followed by a saline in the morning. This is repeated during the course of the disease if necessary.

Flaxseed poultices are applied as local measures. In some cases the pneumonia jacket is used. The treatment of the fever varies. In some cases the tub bath is used at a temperature of 103 F. and over, when the patients are alcoholics or are delirious, and they are sponged regularly when the temperature is 102 F. For the very severe pain poultices are applied or a hypodermic injection of morphin is given if necessary.

For the insomnia, codein, trional or bromids are employed, and for cardiac weakness alcohol, strychnia and digitalis. Alcohol is administered in doses of one dram (4.00) at intervals of from one to four hours, according to indications.

Strychnia is used for two indications: 1. As a heart stimulant secondary to whisky. 2. Where there is evidence of pulmonary edema and cyanosis. It is given hypodermically in doses of grain 1/20 (.003) each. Digitalis is given in cases that do not respond to whisky and strychnia.

Although statistics have been gathered from various sources to prove the value of this or that drug as a specific in pneumonia the fact must not be lost sight of that pneumonia is a self-limited disease, and terminates suddenly in recovery. The reasoning, therefore, is not good that such results are due to certain specific lines of treatment, as statistics may show. But there are a few preparations which have proved so universally of value in the hands of competent observers that they are worthy of mention, among these may be mentioned quinin, creosote carbonate, digitalis, calomel and alcohol.

Rochester, in *Med. News*, Feb. 13, 1904, states that the present antitoxic sera are of no value in the treatment of pneumonia, and until a reliable antitoxin is obtained the treatment must continue along the lines of elimination and support of the patient. Large amounts of pure water should be given to increase the elimination. The eliminative action of the liver and bowels must be kept up through the vigorous use of calomel and salts. The skin must promote elimination through sweats induced by external heat. If indicated, the work on the right heart may be lessened by blood-letting. Stimulation to the heart may be obtained by administering strychnin, alcohol, ammonium carbonate, and, in suitable cases, the subcutaneous injection of the normal saline solution and local treatment applied by leeching and dry or wet cupping.

Sweating may be induced by the hot mustard footbath given in bed without any disturbance to the patient. The patient, in a nude condition, lies between blankets with his knees flexed, his feet in the tub which has been placed under the blanket, the long axis being in the line of the patient's body and legs; another blanket passes from under the tub up over the end and over the knees of the patient. From two to five blankets or a fewer number of blankets and a rubber sheet are then placed over the patient, extending from head to foot and tucked around the patient. The tub is at first filled half full of hot water, in which a heaping tablespoonful of mustard has been dissolved and hot water added as indicated. The bath is kept up for from thirty to forty-five minutes, according to the amount of sweating produced.

During the bath, cold cloths wrung out of ice water are kept constantly on the head of the patient.

The mouth should frequently be thoroughly cleansed with an antiseptic solution. In wet cupping, the author recommends that the cups be left on for half an hour and the process repeated every four or six hours. He relates the value of this procedure by anatomic conditions observed post-mortem. He is not enthusiastic over the applications of ice locally.

The dangers of tympanites in pneumonia are regarded by some authors as being of as great a danger as its presence in typhoid fever, both in a mechanical way through pressure upward and embarrassment of the respirations and through the increased tendency to absorption of toxins. Therefore, the same treatment of this complication should be carried out as in typhoid by change of diet, irrigation of the bowel, salol and laxatives and local application of turpentine stupes.

The embarrassment shown by the lungs in any infection producing tympanites may be demonstrated on autopsy. Oestreich has shown that the atelectatic condition of the base of the lungs in young infants dying from acute intestinal troubles is the probable cause of the extreme prostration and death in these cases rather than the toxemia which is so frequently looked on as the cause.

The rules laid down by Lees for the use of the ice bag in pneumonia, as quoted in the *Sys. of Physiologic Ther.*, are as follows:

1. Apply the ice bag over the dull area and especially over the advancing edge of the consolidation.
2. If the area is large, use two ice bags, or even three.
3. Expect to find a distinct local effect (less bronchial breath-

ing and looser râles) on careful physical examination after the ice has been applied for twenty-four hours.

4. If fresh areas of consolidation develop use additional ice bags; four or even more may be used in a bad case. Correct dosage is as important as with drugs.

5. Apply hot water bottles to the feet and legs. In children apply these before applying the ice.

6. Examine the signs twice daily and shift the ice bags accordingly.

7. If pericarditis is present as a complication, place an ice bag over the heart.

8. If the temperature is below 99 F. or if the hands are cold or the lips blue, remove the bags for an hour, then replace them and use them for two or three-hour periods, with one or two-hour intervals.

9. In severe cases with cyanosis and with a rapid, feeble pulse, consider whether leeches would not relieve the right heart.

10. Pneumonia treated with ice within twenty-four hours after the rigor may sometimes be aborted.

In considering the efficacy of any treatment of pneumonia, Preble, in his recent work on "Pneumonia," states that the variations in the degree of malignancy in the different years must be taken into account; also the previous condition of the patient. Alcoholics, as a rule, are overworked and underfed. In any case, empiricism is not likely to succeed in the treatment of this disease. From a theoretical standpoint, the ideal treatment would be: 1. To destroy the infective agent; 2, to neutralize the toxic products. In this connection he states that no certain progress in the experiments with sera has been made. While some have claimed good results and success from such treatment, others have failed, and consequently any opinion concerning the benefits derived from their use must be held in reserve. He mentions the experience of others in the use of quinin, administered in the form of the tannate, and especially the hypodermic administration of the hydrochlorid in one-half gram doses, administered to patients who are delirous with a small, soft and rapid pulse. And while there is as yet no specific for pneumonia, as this author states, it does not mean that the physician must sit idly by; but, on the other hand, active, thoughtful, careful attention must be given to the patient, who should be placed in a large airy room, with a free circulation of air through one, or better, through two windows. The number of attendants should be limited to one or two. The temperature of the room should be held at 65 F. or less. The patient should be placed on a single bed, with firm springs and mattress. The clothing should be light, proportionate to the temperature of the room. The cotton jacket is of no benefit. The diet should be properly regulated and water offered the patient frequently.

No alcoholics are recommended except in extreme cases and in alcoholic patients. A proper amount of sleep must be obtained, and, if necessary, trional, chloral or whisky may be administered if absolutely necessary.

Fever.—The fever, when ranging under 105 F. in the young or 103 F. in the old, rarely requires more than the ordinary sponging or bath at 90 F. gradually cooled to 80 or 75.

Pain.—Pain can usually be controlled by the application of cold to the parts or counter-irritation by means of iodin, mustard, leeches, or cupping. If these measures fail, strapping the chest is recommended, as in case of a broken rib, using tape from one-half to one inch wide, and placing the lowest strip at the twelfth rib: each succeeding strip should lap over the one below. These should be carried up until the shoulder-chest muscles are reached, then strips should be carried from before backward over the shoulder.

As a last resort to stop the pain morphin may be given hypodermically in doses of grain ⅛ (.008) each.

Cough.—The cough should be treated only when persistent and when the patient is deprived of his rest. In such cases give morphin. The stimulating cough mixtures should never be given early and not until after resolution has commenced. Even in that stage Dr. Preble recommends in their stead guaiacol carbonate in five-grain doses (.30) three or four times a day, or combined with apomorphin, gr. 1/20 (.003).

Dyspnea.—Dyspnea, if it occurs before the second stage is reached, is best treated by venesection. If the patient is not too weak or anemic 18 to 20 ounces may be withdrawn with splendid results. The benefit of oxygen administration is very doubtful, and when it is given the cone should not be held too tightly against the patient's mouth, but some distance away.

Cardiac Failure.—Cardiac failure is the cause of death of the patient. The treatment for this condition consists in the local application of the ice bag, the administration of digitalis in the form of the infusion or fat-free tincture. The alkaloid digitalin has given negative results in Dr. Preble's hands, but he recommends digitoxin as a very valuable heart stimulant. He is of the opinion that the usually prescribed dose of grain 1/250 (.00025) is too large, and he has derived better results from the administration of grain 1/500, and even then the heart must be watched while under its influence.

In old heart lesions, digitalis and nitroglycerin are the ordinary preparations relied on. Cold baths, as a rule, will govern the nervous symptoms. In alcoholics, daily doses of chloral, grains 60 (4.00) may be given.

Small doses of morphin are of benefit in relieving the insomnia.

Delayed Resolution.—Delayed resolution requires a climate where the patient can get out every day along with the employment of the iodids, massage of the chest muscles and the practicing of breathing exercises.

DIET IN PNEUMONIA.

In pneumonia the diet is of the greatest importance. That form of diet should be prescribed which will not increase the cough in swallowing, and will not disturb the stomach and thus aggravate the dyspnea. During the height of the disease the patient should be kept on a liquid diet composed of milk, whey, meat juice, broths and egg albumin. The amount of starchy and saccharine foods should be limited. An abundance of water should be given either plain or carbonated, in order to increase the activity of the kidneys and promote toxin elimination. It is stated by some authorities that carbonated waters reduce the viscidity of the sputum, which, as a rule, is very tenacious in pneumonia.

The liquid diet should be continued until after resolution has commenced unless resolution is postponed, as sometimes happens, and if the patient shows failing strength other food may be added in the way of milk toast, scraped beef, and soft-boiled egg or eggnog. In some cases predigested foods must be substituted when the milk is not well borne.

Fruit may be allowed during the course of the disease, depending on the individual case, and especially is it of benefit during convalescence. Orange juice, lemonade and grape juice are of value during the severest stages. In children even more care must be given to diet, as the appetite is very variable and many resources must be at hand to meet their desires and needs.

Dyspnea in Bronchial Asthma.

Dr. W. F. Wagner, Washington, D. C., writes to THE JOURNAL concerning the use of suprarenalin solution for the relief of the distressing paroxysms of dyspnea in bronchial asthma. He administers, hypodermically, from two to ten drops of the solution diluted in from ten to twenty drops of normal salt solution or sterile water. He states that in a few minutes the distressing shortness of breath is relieved and the patient is able to breathe in a perfectly normal manner. Dr. Wagner finds that when given by the mouth the same results are not experienced. One injection may give complete relief or it may be necessary to repeat the dose in from eight to twenty-four hours. This treatment relieves the paroxysm, but no curative effect has been observed.

[To guard against accident, it would be well to commence with a small dose, as some patients are more susceptible to the drug than others.—ED.]

Medicolegal.

Sale of Liquor by Physician to One with Sickness in Family.—The Supreme Court of Arkansas says, in Blakeley vs. State, where it confirms a conviction of a practicing physician of selling whiskey without a license, that the statute of the state forbids the sale of whiskey without a license and makes no exception, but under certain conditions it permits regular practicing physicians to prescribe and to furnish such stimulants to patients under their charge in prohibited districts when deemed necessary for their treatment. If it be admitted that the sale of whisky by a physician for the purposes named, and after he has complied with the conditions of the statute as to the filing of his affidavit, would not be unlawful, still the statute clearly does not authorize the sale of whisky to a man simply because some member of his family was sick.

Liability for Malpractice. X-Ray Evidence.—The Supreme Court of Arkansas says that, in the malpractice case of Miller vs. Minturn, brought by the latter party, the injury was diagnosed as "a compound dislocation of the tibia at the ankle joint, complicated with a Potts fracture." The evidence on the part of the plaintiff fully sustained the charge of malpractice. That on part of the plaintiff approved his treatment, and exonerated him from negligence and unskillfulness. The jury settled the conflict in favor of the plaintiff. It was then insisted that the verdict for $1,500 was excessive. Mrs. Minturn suffered great pain for many months. At the time of the trial she was still unable to bear any weight on the injured limb, and the indications were strong that it would be years, if ever, before she regained use of her ankle. It was suppurating for many months after the physician treated it, and it was apparent that the bones were not properly brought together. The jury was convinced, from legally sufficient evidence, that this unfortunate condition was directly due to the unskillful and negligent treatment of the physician. The verdict was not excessive. Nor does the court consider that the physician could claim the exemption allowed by the constitution of Arkansas against execution on a judgment "on debt by contract," the action, in substance, being for the wrongful act (tort) of the physician. It says that the action could have been brought for breach of contract or for the tort (wrongful act)—in the former case relying wholly on the contract, express or implied, to treat skillfully and carefully, and waiving the tort, or, in the latter, the contract could be ignored, or pleaded as an inducement, and the action sound in tort alone. Again, the court says that the objection was made to the introduction of *x*-ray photographs of the injured ankle, on account of the alleged inherent weakness of such evidence, and lack of expert knowledge of those making them. The photographs were taken by a professor of the university, with an apparatus belonging to the university, and one of the best made. One of the plates was developed by the professor, and the other by an experienced photographer. The professor's knowledge of radiography was acquired from reading and experimentation. He was frank in admitting this was a subject not thoroughly understood by him, nor any one else. Counsel quoted medical authority to the effect that "radiography, though useful, is at times dangerous, by misleading; by no means to be assumed infallible by a jury or a court." Giving full sweep to this caution in regard to this new science, it did not prove the photographs inadmissible, but merely that they were not infallible and might be misleading. The frankness of the witness was a sufficient guard against their being treated as infallible, and there was nothing to indicate wherein they were misleading. There was no error in admitting them in evidence.

Malpractice Liability of Christian Scientist.—The Supreme Court of New Hampshire, speaking through Bingham, J., says that what the parties mutually expected, in the malpractice case of Spead vs. Tomlinson, was that the defendant would treat the plaintiff for appendicitis according to Christian Science methods; and it necessarily followed that the defendant, in the treatment of the plaintiff was to be judged by the standard of care, skill and knowledge of the ordinary Christian Scientist, in so far as he confined himself to those methods. Had the plaintiff been an infant, non compos, or had never assented to Christian Science treatment, then the question whether the practice of Christian Science, as applied to the treatment of appendicitis, is so contrary to common sense and reason that it would be negligent for such a practitioner to undertake to treat the disease, might be open to consideration by a jury. But being a person of mature years, and having sought such treatment, she could not complain that the method itself was improper. After the filing of the opinion by Bingham, J., on the request of the parties, they were further heard by brief and oral argument, and Young, J., prepared an additional opinion for the court, in which the conclusion is reaffirmed that plaintiff's intelligent and voluntary consent to follow the defendant's advice and to abide the result of his prayers was an answer, under the circumstances, to her claim for damages on account of negligence. It is said that nothing is opposed to public policy which is not forbidden by some provision of law, the contention that it would be contrary to sound public policy to permit the defendant to escape without paying damages must mean that there was some provision of the constitution or statute of the state, or of the common law, which made it illegal for the defendant to rely solely on prayer to heal the plaintiff when he knew she had chronic appendicitis, and which gave her an action to recover all the damages she sustained because of such reliance. The courts were not authorized to allow an action against the defendant, even if they thought he ought to have known that Christian Science must fail when applied to the treatment of chronic appendicitis, unless there was a general rule of law which gave such an action. If the plaintiff was to recover on the ground of public policy, she must establish (1) that it was illegal for the defendant to give her such treatment; (2) that the duty of not giving it was imposed on him for her benefit; and (3) that no illegal act of hers contributed to cause her injuries. Assuming (without deciding) that such treatment is forbidden by the provisions of section 8, chapter 278 of the Public Statutes of New Hampshire of 1891, which makes the killing of a human being by culpable negligence manslaughter, or by the provision of the common law which makes it unlawful for any one to do what is liable to endanger the life or health of others, and that the duty of not doing what is forbidden by either provision was imposed on the defendant for the plaintiff's benefit, the question still remained whether the plaintiff's own wrong contributed to cause her injuries. It is elementary that, if it was illegal for the defendant to treat the plaintiff as he did, it was equally illegal for her either knowingly to employ him to give her such treatment or to consent to be so treated. It did not follow, as a matter of law, from the fact that the plaintiff could not recover in this action on the claim of negligence, that the defendant would not have been guilty of manslaughter if the plaintiff had died from the effects of his treatment. If he had been indicted under the provisions of Sec. 8, C. 278, Pub. St. 189', the state would base its right of action on his failure to perform a duty the law imposed on him for its benefit. The state has a direct interest in the lives and health of all its citizens. Every one who has to do with the lives and health of others not only owes the individuals with whom he comes in contact a legal duty, but also owes the state the duty of using ordinary care to do nothing which will endanger their lives or health. In an action by the state it would be no answer to show that, if the deceased had used ordinary care to avoid being injured, he would not have died; for the defendant is not indicted for his failure to perform a duty the law imposed on him for the deceased's benefit, but for his failure to perform one imposed on him for the benefit of the state. Assuming that the defendant's statement that he

could and would cure the plaintiff might be the foundation of an action of deceit, her case failed, for there was no evidence that he made it with a fraudulent intent. Although a jury could find from their knowledge of human affairs, their own experience, and the evidence in the case, that the defendant's statement that he could cure the plaintiff without the aid of any material agency, when he knew she had appendicitis, was untrue, it did not follow that they could infer, from the single fact that they were convinced of its untruth, that the defendant did not believe he could induce God to heal her when he made the statement. The plaintiff failed because of the insufficiency of her evidence to prove the facts necessary to maintain her case.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

January 28.

1 History and Development of Surgery During the Past Century. (To be continued.) F. S. Dennis, New York City.
2 Hepatic Abscess. N. W. Sharpe, St. Louis.
3 *Theory and Practice of Percentage Feeding in Infancy. W. P. Northrup, New York City.
4 *Lobar Pneumonia in Infancy. J. L. Morse, Boston.
5 *Foreign Bodies in the Esophagus. C. E. Black, Jacksonville, Ill.
6 Strabismus and Its Treatment. C. M. Harris, Philadelphia.

3. **Percentage Feeding in Infancy.**—Northrup discusses the question of infant feeding, especially with modified cow's milk. For those turning their attention for the first time to the subject, he offers the following guiding points to serve as a basis in the feeding of healthy infants: 1. *Sugar solution.*—For the first three to five days of life a normal infant may take a 5 per cent. watery solution of sugar of milk, 3 to 4 drams, every three hours. From the fifth to the seventh day, the infant may be given fats, 2 per cent.; sugar, 5 per cent.; total proteids, 0.5 per cent., or whey proteids, 0.25 per cent.; caseinogen, 0.25 per cent.; feedings, 10; amount in each feeding, 1 ounce; alkalinity, 5 per cent. Heated to 155 F. for twenty minutes, or raw, if preferred. Feed every two hours by day, twice at night. 2. *Low average breast milk.*—From the first fortnight to the first month, according to its ability to digest, the average infant may take this, which consists of fats, 3 per cent.; sugar, 6 per cent.; whey proteids, 0.5 per cent.; caseinogen, 0.25 per cent; feedings, 10; amount in each feeding, 1½ to 2 ounces; alkalinity, 5 per cent. Heated to 155 F. for twenty minutes, or raw. Feed every two hours. 3. *High average breast milk.*—For the second or third month this may be taken. It consists of fats, 4 per cent.; sugar, 7 per cent.; total proteids, 1 to 2 per cent., or whey proteids, 0.9 per cent.; caseinogen, 0.5 per cent.; feedings, 8; amount in each feeding, 3 to 4 ounces; alkalinity, 5 per cent. Take raw, if weather is not too warm. Intervals of feeding, 2½ hours. At 6 months, 6 feedings, 6 ounces; intervals, 3 hours; total in 24 hours, 36 ounces. Against constipation, give raw, unboiled proteids. Never consign a baby to a definite prescription, especially a weak one, and then forget it for months. Develop the feedings to the maximum (a good, full diet), especially the proteids, and give raw. Proteids can be given in clean, laboratory-modified milk to a higher percentage than earlier teachings lead us to believe. The feedings of an infant under a year old should be inspected every two weeks.

4. **Lobar Pneumonia in Infancy.**—Morse believes that the course and prognosis of this disease differ materially from the descriptions given in many text-books, and that the affection is far more common than is generally supposed. The clinical history and treatment of the condition are discussed in full.

5. **Foreign Bodies in the Esophagus.**—Black reports two cases of this kind and comments on the value of the Roentgen ray in arriving at a correct diagnosis, disclosing the nature and location of the body in the esophagus. He also emphasizes the value of fluoroscopy, not only as an aid to diagnosis but in directing and controlling the handling of instruments in the esophagus. One of his patients had swallowed an ordinary pin and the other a half-inch iron washer. The pin was removed with forceps under the guidance of the fluoroscope, but the washer could not be budged, owing to the extremely swollen tissues. This second patient expired suddenly, after vomiting a dark fluid consisting of partly digested blood and stomach fluids.

Medical Record, New York.

January 28.

7 *Pathologic Characters, Diagnosis and Epidemiology of Bubonic Plague. M. J. White, Washington.
8 *Limitations of the Office Treatment of Rectal Diseases. C. B. Kelsey, New York.
9 *Use and Abuse of Curettage of the Uterus. E. J. Browd, New York City.
10 *Gluttony or Food Poisoning as a Cause of Symptomatic Epileptic Convulsions. W. P. Spratling, Sonyea, N. Y.
11 Marked Mental Improvement Following Operation for Depressed Fracture of Skull. B. V. D. Hedges, Plainfield, N. J.
12 Geheimrath Dr. Dettweiler. Eulogy Pronounced on the Occasion of the first Anniversary of His Death. S. A. Knopf, New York City.

7. **Bubonic Plague.**—White describes in full the biology of the plague bacillus and its pathogenesis; the pathologic characters of the clinical varieties of plague, the bubonic, the pneumonic, and the septicemic; the postmortem appearances of the plague rat, insects, and other animals; the clinical and bacteriologic diagnosis of plague; the hosts and distributors of the infection, and the manner of its transmission from one place to another. As the principal transmitters of infection from port to port he recognizes: 1. Imports likely to be eaten or infested by insects and rats; 2, persons, wearing apparel and bedding; 3, scavenger and, possibly, granary insects; 4, rats and other animals.

8. **Limitations of Office Treatment of Rectal Diseases.**—Kelsey says that a very large proportion of all cases of piles, fissures, superficial ulcers, and pruritus, and a certain proportion of abscesses and fistulæ may be radically cured in one's office without resorting to the use of ether or confinement to bed, but much judgment is necessary in selecting the proper cases. In general, it may be said that it is often simpler in the end and safer and more comfortable for the patient to operate at home or in the hospital.

9. **Use and Abuse of Curettage.**—Browd pleads for a more careful, discrete and scientific application of curettage; discusses the method of performance, its indications and contraindications, and cites several cases in which a disregard of necessary precautions resulted in serious consequences.

10. **Gluttony as Cause of Symptomatic Epilepsy.**—Spratling cites a case of epileptic convulsions due to dietetic errors, a fairly common condition, and one generally amenable to treatment. The patients are usually middle-aged men, leading inactive lives and eating and drinking to excess. The primary cause of the convulsive attacks in these cases seems to lie, first, in a weak stomach and, second, in some obscure disorder of metabolism. The type of convulsion is usually of the grand mal variety. The treatment consists of the elimination of waste and toxic products and the prevention of the recurrence of such products. Put the patient on a low diet, one that is easily digested, insist on absolute regularity in taking food, and going to bed on an empty stomach. Cut off all meat for supper and breakfast, and teach the patient to have a wholesome respect for cooked fruits, bread and butter, toast, milk, chocolate and cocoa, eggs, and other such things for supper. If there is a tendency to constipation, correct it by daily doses of the fluid extract of cascara, given some time before breakfast. Stop all use of alcohol, and if the patient is irritable or nervous, and if his attacks show a tendency to recur under the low dietetic régime, put him on a nerve sedative made up so that each dose represents from 10 to 15 grains of an equivalent of bromid of potassium. Let the patient take as much outdoor life as possible. Hydrotherapy is of great value.

Medical News, New York.

January 28.

13 *Irregular Features of Lobar Pneumonia. C. K. Law, Jersey City, N. J.
14 *Excision of Superior Cervical Ganglion of Sympathetic for Simple Glaucoma. C. W. Cutler, New York.

15 Homicide During a State of Somnambulistic Automatism. T. M. T. McKennan, Pittsburg, and W. K. Walker, Dixmont, Pa.
16 Diagnosis of Diseases of the Upper Abdominal Region. C. D. Hill, Jersey City, N. J.
17 Relation of Cholin to Epilepsy. (Concluded.) J. Donath, Budapest.
18 *Ruptured Ectopic Pregnancy, with Reference to Cases of the Acute Intraperitoneal Type. G. Walsh, Chicago.

13. **Irregular Features of Pneumonia.**—The irregularities to which Law calls attention are empyema, as a sequel; central pneumonia, or pneumonia with late localization; migratory pneumonia, and the sensation of the initial pain of the involved pleura in various parts of the abdomen.

14. **Excision of Superior Cervical Ganglion for Glaucoma.**—Cutler expresses the hope that this operation will not be allowed to fall into disuse because of any fancied difficulties it presents to patient or surgeon. The risk and discomfort is trifling in skillful hands, and the danger to the eye itself is entirely negligible. Whether this can be said of iridectomy, especially in chronic simple glaucoma, with the field near the fixation point, is open to discussion. Several cases are cited by the author to confirm his position.

18. **Ruptured Ectopic Pregnancy.**—Walsh merely emphasizes a single point in the treatment of acute, ruptured ectopic pregnancy, namely, the mistake of wasting time in the attempted removal of the blood clots.

New York Medical Journal.

January 28.

19 *Relation of Radiographic Appearances to Clinical Symptoms in Hip Disease. R. W. Lovett and P. Brown, Boston.
20 Vesicorectal Anastomosis. B. M. Ricketts, Cincinnati.
21 Ovarian Angioma. B. M. Ricketts, Cincinnati.
22 Case of Brown-Sequard's Paralysis Following Gunshot Wound in the Neck. A. Gordon, Philadelphia.
23 Significance of Abulic Symptoms in Mental Disease. R. H. Chase, Philadelphia.
24 Pathology and Treatment of Diabetic Gangrene of the Lower Extremity. (Concluded.) H. J. Whitacre, Cincinnati.
25 *New Stain for Bacillus Tuberculosis. I. S. Wile, New York City.
26 Some Abuses in the Intranasal Surgery of To-day. J. M. Mackenzie, Baltimore.
27 Recurrent Perinephritic Abscess of 26 Years' Standing, Presenting Clinical Picture of Addison's Disease. G. E. Moleen, Denver.

19. **Radiograph and Hip Disease.**—Lovett and Brown undertook to determine what value radiographs possessed, taken by themselves, in the diagnosis of hip disease, and especially in the detection of early disease. One hundred consecutive negatives of the hip joint were examined. The clinical history of each case was looked up later and the value of the opinion formed from the radiograph tested in this way. These cases included practically every obscure and difficult case of trouble in the hips seen during the last three or four years at the hospital in which these investigations were made, for such cases were likely to be *x*-rayed, whereas routine cases might not be. The 100 cases classed by the opinions expressed from examination of radiographs may be tabulated as follows: Normal, 20 cases; hip disease or probable hip disease, 61; old hip disease, 4; destructive disease, not tuberculous, 2; coxa vara, 2; doubtful or questionable, 4; abnormal, but not hip disease, 2; probable hip disease (proving to be abscesses of groin), 2; various diagnoses not borne out by clinical history, 3. Of the normal cases, 8 were radiographed for other affections, such as Pott's disease or stone in the bladder, and the hips were included incidentally. Seven cases were radiographed for suspected disease, but recovered so speedily that the affection was probably synovial. Two cases with a normal radiograph showed a typical history of hip disease. Three cases pursued a history not characteristic of hip disease. Therefore, the fact that the radiograph is normal is of much significance and should make one delay about diagnosticating hip disease in such cases. Of the 61 cases diagnosticated as hip disease from the radiograph, the clinical history was typical, and the subsequent course of the affection confirmed the radiographic diagnosis. The radiographic diagnosis of old hip disease was borne out by the clinical history. That of destructive disease not tuberculous proved to be osteomyelitis of both hips in one case, and in the other a hip following typhoid. The diagnosis of coxa vara was substantiated by the clinical diagnosis. In the two cases diagnosed as probable hip disease, the clinical records showed that these cases had suffered from an acute abscess of the groin in no way connected with the hip. The clinical history of the four questionable cases showed that in one there was atrophy, in another slight atrophy with some enlargement of the head and neck, in the third there was thickening of the head and neck and dislocation; in the fourth, slight atrophy with thickening of the head. The two cases classified as abnormal but not hip disease were found to be suffering from some acute affection of the hip, from which they recovered in a few weeks. In the remaining three cases the *x*-ray appearances did not agree with the clinical history. In two what appeared to be marked signs in the hip went with the history of a slight affection, and in the third an opinion was expressed that a destructive affection was osteomyelitis, while bacteriologically it proved to be tuberculous. The authors conclude that the value of the radiograph in the diagnosis of hip disease is great in the hands of persons of average experience. That a radiograph free from abnormal appearances does not show that hip disease is absent or will not develop, but that in a case of doubtful clinical diagnosis a normal *x*-ray is a matter of weight and makes the likelihood of speedy recovery greater than will a radiograph with abnormal appearances. In 95 of these cases the opinion formed from the *x*-ray was borne out clinically.

25. **New Stain for Tubercle Bacillus.**—Wile's method is as follows: The film is prepared and stained with carbolfuchsin in the usual way, but, instead of using Gabbet's solution, or decolorizing with acid alcohol and counterstaining with Bismarck brown, the smear is drained of excess of carbolfuchsin stain, washed in distilled water, and then plunged repeatedly into Labarraque's solution until the slide presents a uniform brown appearance. The slide is thoroughly washed in distilled water to remove an excess of hypochlorite solution, dried between blotting or filter papers, and examined with a 1/12 immersion lens. The tubercle bacilli appear as red rods on a brown field. Other bacterial forms, with the possible exception of the smegma and lepra bacilli, are brown in color—the red having been altered to brown by the action of Lebarraque's solution.

Boston Medical and Surgical Journal.

January 26.

28 Psycholeptic Crises. Pierre Janet, Paris.
29 *Gastroenterostomy (a preliminary note). J. G. Mumford, Boston.
30 Prophylaxis of Syphilis. W. G. MacDonald, Boston.
31 *Etiology of Pulmonary Tuberculosis Considered in Relation to Its Therapeutics. L. F. High, Southern Pines, N. C.
32 Points Pertaining to the Management of Diabetic and Non-diabetic Glycosuria. (Concluded.) H. Stern, New York City.

29. **Gastroenterostomy.**—Mumford proposes an operation he has practiced of late in cases of gastric cancer, which returns the parts to an essentially normal anatomic condition. The operation is an elaboration of the well-known procedure of Chabut. Mumford adds a fourth step to the operation, that of invariable, routine section of the pylorus. He says that it adds nothing to the risk, the vicious circle is rendered impossible, and the duodenum, being side-tracked, becomes a mere duct, a continuation of the common bile duct.

31. **Etiology of Tuberculosis in Relation to Therapeutics.**—High urges going beyond the findings of the microscope, and considers as a reason for the universal prevalence of the disease the incalculable extent of physical degeneration of median degree due to the simple lack of clean, pure, unbreathed outdoor air, on account of which tuberculosis finds a foothold. Treatment should be directed that way, in addition to efforts made to destroy the tubercle germ.

St. Louis Medical Review.

January 21.

33 Hydatid Cysts of the Liver. N. Macphatter, New York.
34 Case of Typhoid Perforation. J. Y. Brown, St. Louis.
35 Ibid. W. C. G. Kirchner, St. Louis.

University of Pennsylvania Medical Bulletin, Philadelphia.

January.

36 General or Localized Hypotonia of the Muscles in Childhood. W. G. Spiller, Philadelphia.
37 Congenital Spastic Rigidity of the Limbs. W. G. Spiller, Philadelphia.
38 *Pseudo-bulbar Palsy. T. H. Weisenburg, Philadelphia.
39 Muscular Atrophy, Degeneration of the Trigeminus Nerve and of the Lateral Columns and Anemic Changes in the Spinal Cord Occurring in Tabes Dorsalis. C. D. Camp, Philadelphia.
40 Pathologic Study of Acute Myelitis. J. H. W. Rhein, Philadelphia.
41 Combined Pseudosystemic Disease with Special Reference to Annular Degeneration. A. R. Allen, Philadelphia.
42 Bulbar Symptoms Occurring with Carcinoma of Parts Other Than the Nervous System and Resulting from Intoxication. T. H. Weisenburg, Philadelphia.
43 Fibrous Nodules in the Cerebral Pia-Arachnoid Causing Appearance of Tuberculous Meningitis. C. D. Camp, Philadelphia.
44 Primary Degeneration of Pyramidal Tracts. Study of 8 Cases with Necropsy. W. G. Spiller, Philadelphia.

38. **Pseudobulbar Palsy.**—Weisenburg reports the following cases: 1. Man, aged 56, syphilitic. History of several attacks of hemiplegia involving the left side of the body, but no distinct history of a right hemiplegia, although the patient had subsequently slight attacks, and examination showed a weakness of all the extremities, distinctly more marked, however, on the left side. The reflexes were also more exaggerated on the left side. Sensation was normal. Speech was bulbar in character; there was difficulty in swallowing and eating; dribbling of saliva, forced crying and dementia. Microscopically, on the right side, an area of secondary degeneration was found in the middle part of the posterior limb of the internal capsule, and a sclerotic area in the outer portion of the lenticular nucleus. The middle part of the foot of the right cerebral peduncle was degenerated. Degeneration of motor fibers was traced through the pons and medulla into the lumbar region of the cord. In the cervical and thoracic regions the degeneration of the right direct pyramidal tract was more intense than that of the left crossed pyramidal tract. On the left side of the brain an area of softening was found in the knee of the internal capsule. The innermost part of the foot of the left cerebral peduncle was degenerated. The degeneration in the pons was limited to one or two bundles quite near the raphe and in the ventral part of the pons. In the medulla oblongata it was confined to the outer part of the pyramidal tract. In the cervical and in the mid-thoracic regions the degeneration was confined to the direct pyramidal tract. The nuclei and the intramedullary fibers of the different cranial nerves were normal. The optic and oculo-motor nerves were normal. The tongue and the laryngeal muscles were normal. Syphilitic round-celled infiltration of the pia was apparent in the cord and brain. 2. Man, aged 52 years, not syphilitic, had a number of attacks of hemiplegia, involving first the left side and later the right. Difficulty in speech and in swallowing became apparent after the second attack. All the extremities were weak, especially those on the left side. Sensation was normal. The patient was demented, had bulbar speech, difficulty in swallowing and chewing, and dribbling of saliva. An area of softening was found in the knee of the right internal capsule. Microscopically, an area of softening was found in the medulla, confined to the left pyramid, and a small part of the adjacent fibers of the left lemniscus. Other areas of softening were found in the knee and in the anterior part of the posterior limb of the left internal capsule, and in the ventral part of the red nucleus on the same side. Secondary degeneration of the pyramidal fibers was traced on both sides to the lumbar region of the spinal cord. 3. Man, aged 55 years, not syphilitic had several attacks of hemiplegia, confined to the left side. Examination showed a weakness of all the extremities, more so, however, on the left side. There was difficulty in speech, in chewing and in swallowing. Saliva dribbled from the mouth. The mentality was poor. Areas of softening were found on the right side of the brain, in the anterior limb of the internal capsule near the knee, and in the outer part of the lenticular nucleus, also involving the fibers passing to the posterior limb of the internal capsule. On the left side there was a scar of an old area of softening in the substantia nigra of the left cerebral peduncle. The median and adjacent part of the foot of the right cerebral peduncle was degenerated. The secondary degeneration of the motor fibers was traced to the crossed pyramidal tract of the cervical region of the spinal cord.

American Journal of Obstetrics, New York.

January.

45 Conception of the Sphere of Gynecology. J. Wesley Bovée, Washington.
46 *Further Results in the Use of a Modified Champetier de Ribes Balloon. J. D. Voorhees, New York City.
47 Accidental Perforation of the Uterus During Curettage; with Bowel Injury and Resection of Four Feet of Small Intestine. W. Hessert, Chicago.
48 *New Self-retaining Catheter and Vesical Irrigator. H. G. Wetherill, Denver.
49 *Suture and Ligature Material. C. E. Congdon, Buffalo.
50 Removal of a Dermoid Cyst and a Decomposing Fetus from the Uterus by Abdominal Section. J. A. Sutcliffe, Indianapolis.
51 Physometra; Pyometra; Hematometra. E. J. Mellish, El Paso, Texas.
52 Pregnancy Complicating Fibroids. D. W. Basham, Wichita, Kan.
53 Albuminuria and Nephritis of Pregnancy and Labor. R. W. Stewart, Cincinnati.
54 Dermoid Cyst of the Ovary Complicating Labor. W. M. Thompson, Chicago.
55 Early Diagnosis of Cancer of the Fundus. Hunter Robb, Cleveland.
56 Cystadenoma of the Pancreas Removed by Abdominal Section. L. H. Dunning, Indianapolis.

46. **Use of Modified Champetier de Ribes Balloon.**—Voorhees says that of the many measures in use for starting labor and for shortening its duration none is of more value in certain cases than the use of a conical cervical dilator—Champetier de Ribes balloon. The operation for the insertion of the balloon is very simple, except in a few instances, and can be done with one assistant—the nurse. An anesthetic is employed only in those cases where a preliminary divulsion or a manual dilatation of the cervix is necessary to get enough room for the insertion of the bag, where the cervix is so high that it is difficult to reach when the patient is very nervous and excitable, or where the vulvar orifice is very narrow and sensitive. Here light chloroform narcosis is all that is required. The bags employed by Voorhees differ very little from those of Champetier. They are identically the same in shape and are made with his principles—to be impermeable, to be inextensible beyond a certain volume, to be long enough to fill the cervix—in short, to simulate nature's bag as nearly as practicable. Voorhees' balloons differ somewhat in size and are made stronger in order to withstand the uterine and abdominal contractions, to resist the tension when filled with a fluid, and to permit a certain amount of traction on the tube without rupture. This required a foundation of thin canvas, instead of silk, covered by a thicker rubber outside, but, more than all, that the seams be firmly sewed and cemented, especially where the tube joins the ampulla. Some of the objections to the balloons are: 1. They may rupture the membranes. This happens rarely, and it makes little difference if they do, says Voorhees. If the fluid does escape, the dilatation is rapid enough to do little harm. 2. They may separate the placenta—only in placenta previa, but the bag arrests the hemorrhage. 3. They may increase the tension in the interior of the uterus, which is neither painful nor harmful. 4. They may displace the presenting part, but by slow distention of the bag and by watching the presenting part, it can be kept in place. This is more apt to occur in cases of flat pelvis. 5. The cord may prolapse, if it is long or loosely coiled about the neck. 6. Sepsis. If the aseptic technic is correct there should be no infection. Voorhees is convinced that the modified balloon is the best artificial hydrostatic dilator of the cervix; that it is especially effective in dry labors to start pains; that labor, if prolonged and protracted from whatever cause, is hastened and in a large percentage of the cases terminates spontaneously after their use; that the balloon is the best and most certain method of inducing labor for all indications, and that in eclampsia and in placenta previa the balloon has a field of usefulness which

diminishes markedly maternal and fetal mortality. In his private practice Voorhees has used the balloon in 39 out of 200 cases. One of these 39 cases was a dry labor. All the children did well. The balloon was used in 4 out of 19 prolonged or protracted labors. Three were primiparæ with occipito-posterior positions, and in 1 the pelvis was a flat justa-minor. In all, the membranes had been ruptured for some hours. Oxytocics and chloral had been used without success after the patients had been in labor from 13 to 39 hours. The cervix was tough in all cases and undilated beyond two fingers at the time of introduction of the balloons. Complete dilatation was accomplished in from 5 to 32 hours. All the mothers and babies did well. In the 200 cases, labor was induced 32 times. A bougie was used in 8, but had to be supplemented by a balloon. In 24 cases the bag was employed alone. Ten were primiparæ, 19 were multiparæ. The indications for the induction of labor were contracted pelvis, chronic endocarditis, prolonged gestation, accidental hemorrhage, albuminuria and threatened eclampsia and a history of previous difficult deliveries and still-births. All the children were born alive except one, a craniotomy case. Two subsequently died—a non-viable child in a case of accidental hemorrhage, and one of a case of premature twins. The balloon was also successfully used in two cases of marginal placenta previa. Statistics are also quoted in detail of 4,272 cases occurring at the Sloan Maternity Hospital during the four years ending Sept. 1, 1903, for which we must refer our readers to the original article.

48. See abstract in THE JOURNAL, vol. xvii, p. 487, ¶6.

49. **Suture and Ligature Material.**—Congdon has for several years employed catgut, which is modified so that it may be boiled like silk, and is, therefore, rendered thoroughly dependable for deep sutures and ligatures without destroying its ultimate absorbability or interfering with its natural adaptability for handling and tying. He takes dry catgut, which comes in strands ten feet long, carefully tests for imperfections by passing through the hands and noting its strength and inspecting it for weak points and irregularities, fastens one end to the end of a glass cylinder, for instance, an ordinary drainage tube which has a hole drilled near each end, winds snugly in a single layer, and fastens the other end similarly. Then completely submerges in a 3 per cent. formalin solution. No. 4 is allowed to remain in the solution for four hours, No. 3 for three hours and five minutes, No. 2 for two hours and fifteen minutes, and No. 1 for one hour and thirty-five minutes. The catgut is then removed and immediately placed in running water for the same length of time that it has been in the formalin solution. It is then dried in the open air at ordinary temperature, labeled and put away for future use. The catgut thus prepared may be handled precisely like silk, from which it differs only in its ultimate absorbability. The approximate time for which material thus prepared may be depended on to furnish support to the tissues is as follows: No. 4, seven days; No. 3, five days; No. 2, three days; No. 1, thirty-six hours. Where it is desirable to support and maintain the tissues in apposition for a long time, a 5 per cent. formalin solution is employed instead of a 3 per cent., and the gut is left in the solution for as long a time as is compatible with the preservation of a fair degree of flexibility. This time has been found to be approximately double that stated for the respective sizes of gut when treated by the 3 per cent. solution. In any case, the washing in running water is carried on for the same length of time used in the immersion in formalin solution. No. 4 gut, treated according to the latter specifications, will remain in the tissues for from four to six weeks, but is subsequently completely absorbed. No. 1 gut prepared by the second process may be used in surgery of the biliary or urinary bladder or their tracts with perfect safety. In obstetric practice No. 3 or No. 4 gut, prepared by the first process, is to be selected. In hernia operations, where there is likely to be considerable traction on the fascia, No. 4 gut will meet all expectations.

Archives of Pediatrics, New York.

January.

57 *Nervous Exhaustion in Infants. W. P. Northrup, New York.
58 Hodgkin's Disease Diagnosed as Malignant Lymphoma; Final Complication; Pulmonary Tuberculosis. D. H. Sherman and H. R. Gaylord, Buffalo.
59 Chorea Minor. Clinical and Therapeutic Data. H. W. Berg, New York.
60 *Hemorrhage of Syphilitic Origin in the New-born. W. R. Wilson, Philadelphia.
61 Duration of the Prodromal Period in Roetheln. D. J. M. Miller, Philadelphia.

57. **Nervous Exhaustion in Infants.**—Attention is called to this condition by Northrup, and a case is cited of a four-months baby suffering from nervous exhaustion, nervous dyspepsia and prostration, the condition being cured finally by instituting rest treatment and by providing an intelligent nurse. The baby made a good start in life, but after a few months social demands began to wear on the mother and the milk suffered. In addition to all this was the incessant wear on the child's nerves by the noise made by trolley cars and other street traffic and other injudicious excitement, such as waking the baby from sleep, jumping it in the air, etc. Quiet surroundings were provided, the infant was fed in a dark room, all unnecessary noises were either muffled or reduced, and, above all, a wise nurse was given sole charge of the infant. The result was that in a fortnight the baby was feeding on maximum diet, sleeping perfectly, and gaining in weight. It has thrived ever since.

60. **Hemorrhage of Syphilitic Origin in Newborn.**—Wilson says that the clinical manifestations which accompany hemorrhage are various, depending on the development of the infant as to prematurity, on the degree of blood dyscrasia, and probably on the thoroughness of the specific infection. He relates the following cases: 1. Death following umbilical hemorrhage, with wasting and signs of cerebral pressure. Autopsy revealed intracranial hemorrhage. History of syphilis in the mother. 2. Death in a premature infant following umbilical hemorrhage. Clinical evidences of syphilis during life in the form of vesicular eruption on the plantar surfaces. Autopsy revealed subarachnoid hemorrhage; infarction of both kidneys. A history in the mother of previous miscarriage in the third month. 3. Death from asphyxia. Skin hemorrhages in the form of more or less extensive extravasation. Syphilitic enlargement of the liver. Autopsy revealed nothing of interest beyond the liver condition. History of syphilis in the mother. 4. Death immediately following birth in a premature infant. Bleeding from cord; petechial eruption; marked syphilitic degeneration of placenta. 5. Ecchymosis of serous membrane and minute apoplectic areas in lungs. Tubercular syphiloderm in palmar surfaces. Laryngeal obstruction and marked scaling of skin during life. 6. Hemorrhage from mouth and cord complicated by icterus. Typical manifestation of congenital syphilis in the form of emaciation and pallor. Autopsy showed chronic hepatitis and suprarenal hemorrhage. 7. Hemorrhage from cord. Death followed inanition in the course of suppurating gummata of the scrotum and great toe. 8. Still-born infant. Gumma on external border of both feet. Scleral hemorrhage. Autopsy showed subarachnoid hemorrhage; enlargement of the thymus. 9. Still-born infant. Subcutaneous extravasation. Evidence of leakage from the cord after ligation. Bullous eruption of the palmar and plantar surfaces. 10. Still-born infant. Cutaneous hemorrhage. Autopsy showed pericranial and subperiosteal hemorrhage; subcapsular hemorrhage of the liver; syphilitic periostitis and necrosis of the cartilage of the nose existed in the mother.

Physician and Surgeon, Detroit and Ann Arbor, Mich.

December.

62 Pancreas in Amyloid Disease. E. E. Butterfield, Ann Arbor.
63 *Advantages of the Short Incision in Ideal Laparotomies. Bayard Holmes, Chicago.
64 Surgery of the Hand. Hal C. Wyman, Detroit.
65 Accidental Multiple Vaccination of the Face Associated with Psoriasis. D. M. Cowle, Ann Arbor.
66 *Duodenal Ulcer Caused by Pressure from Stones in Gall Bladder. G. H. Cattermole, Boulder, Colo.

63. **Short Incision in Laparotomies.**—Holmes points out that surgical incisions are made for the purpose of securing drainage and to give access to the parts. In the former instance there is every reason for a liberal gash, while in the latter case the wound must be closed again, and many reasons exist for an incision as short as possible. In the former case drainage must be adequate, and a longer incision will not detract from this end, while a shorter one is fatal to its purpose. In the latter case the cut must be long enough to reach the protected part, and if it is longer it only adds to the mutilation of the patients and to the disadvantages of closure. In operations about the face, cosmetic reasons exist for making a short incision, and in abdominal incisions for various purposes an extremely short incision prevents at once the disfiguring scar, prevents waste of time and suture, shortens the anesthesia, prevents the operation hernia, allows the patient an almost immediate erect posture and shortens the stay in the hospital. All these advantages encourage early, and therefore safe, operative procedure, diminish greatly the number of years of suffering by the multitude of patients who are deterred from seeking surgical relief by the long period of confinement, the risk of hernia, and the disfiguring scar which a long incision entails.

66. **Duodenal Ulcer and Gallstones.**—Cattermole's patient was suddenly seized with pain in the region of the liver, extending behind to the right shoulder. He soon became moribund; there was no pulse at the wrist; he could not swallow water; the abdomen was very much distended and tympanitic, especially over the liver; there was no peristalsis nor tumor. Death ensued within twenty-four hours. In cutting through the peritoneum, just below the ensiform cartilage, a large amount of gas and brownish fluid escaped. All serous surfaces were congested and there was considerable deposit of fibrin on the intestines and parietal walls. About the liver, stomach and duodenum there were adhesions, showing where fluid had been walled off. The gall bladder was contracted down over two large gallstones, and where the gall bladder came in contact with the duodenum an ulcer had formed, perforating the bowel. This ulcer was on the upper surface of the duodenum, about one-half inch from the pyloric opening of the stomach. The edges of the ulcer were hard and fibrous, showing a long-continued irritation. Evidently, the ulcer was caused by pressure from the gall bladder. The ulcer was largest on the peritoneal surface, sloping toward the opening in the mucosa. The patient had for years led a very sedentary life. thus probably lessening the danger of early perforation.

Journal of Infectious Diseases, Chicago.

January.

67 Some Physical Properties of Enzymes. E. J. Levi, Ann Arbor.
68 *Fatal Infection by a Hitherto Undescribed Chromogenic Bacterium Bacillus Aureus Fœtidus. M. Herzog, Manila, P. I.
69 Observations on the Bionomics of Anopheles. E. O. Jordan and M. Hefferan, Chicago.
70 *Summer Diarrhea in Infants. G. H. Weaver, R. M. Tunnicliff, P. G. Heinemann and Mae Michael, Chicago.
71 Identification of Alcohol, Soluble, Hemolysins in Blood Serum. A. Woelfel, Chicago.
72 Protective Inoculation Against Asiatic Cholera. R. P. Strong, Manila, P. I.
73 Studies in Phagocytosis. L. Hektoen and G. F. Ruediger, Chicago.

68. **Fatal Infection by Bacillus Aureus Foetidus.**—The observations reported by Herzog refer to a case of fatal human infection by a hitherto undescribed organism, which is evidently not very pathogenic in ordinary conditions and, as a rule, is probably a harmless saprophyte, which, however, in circumstances especially favorable may become parasitic and cause a fatal issue. The patient died rather suddenly, and it was suspected that he had died of plague, having an open wound on his right leg and a marked swelling of the inguinal glands of the right side. Cultures made from the liver and heart developed pure cultures of a short, small bacillus which produced a golden-yellow pigment. The name *Bacillus aureus fœtidus* was selected for this microorganism because of its chromogenic and malodorous properties. It is a short bacillus with rounded ends, varying in size from 0.6 to 2 microns long and from 0.55 to 0.8 microns in thickness. It frequently presents itself as a diplo-bacillus, and occasionally is differentiated with difficulty from true diplococci. It possesses a capsule of moderate size. Spore formation was not observed. The organism is not motile. It stains readily by the watery anilin stains, and when lightly stained it may show polar granules. Gram's method decolorizes the bacillus. In culture it produces an intense golden-yellow pigment, and all cultures where aërobic or anaërobic have a fetid, cheesy and somewhat cadaverous smell. The thermo death point of the organism was determined to be 62 C. It grows readily on all culture media.

70. **Summer Diarrhea in Infants.**—With a view to solving some of the problems connected with the intestinal diseases in children, the authors undertook to study all the cases of summer diarrhea presenting themselves at a Chicago sanitarium. Cultures were made and studied from 102 cases. From 76 cases no bacilli corresponding to any of the types included in the dysentery bacillus group were found. From 26 cases (25.4 per cent.) bacilli were cultivated which possess the cultural properties shown by one or the other member of the dysentery bacillus group. No culture was obtained which corresponded to the true Shiga bacillus. Grouped according to the classification of Flexner, 15 cultures from 11 cases correspond to the Flexner-Harris type, and 18 cultures from 17 cases to the bacillus Y type. From 2 cases both these types were obtained. The methods employed in testing the agglutinative properties of organisms obtained from these cases made use of four different strains of dysentery bacilli: 1, Shiga; 2, Kruse; 3, Flexner, and 4, the Y type. Of the 33 organisms examined, 29 gave positive results with one or more of the sera. Of these 29, 9 agglutinated with a single serum, as follows: 3 with Shiga's serum, 1 with Kruse serum, 4 with Flexner serum and 1 with Y serum; 12 agglutinated with two kinds of sera, as follows: 3 with Shiga and Flexner sera; 2 with Shiga and Y sera; 4 with Kruse and Y sera; 3 with Flexner and Y sera. Six agglutinated with three kinds of sera: 2 with Shiga, Kruse and Flexner sera; 1 with Shiga, Kruse and Y sera; 2 with Shiga, Flexner and Y sera; 1 with Kruse, Flexner and Y sera. Two organisms agglutinated with the four different sera employed. So far as the clinical features of these cases are concerned, dysentery bacilli were not found in all cases characterized by mucus and blood stools. The group of cases in which dysentery bacilli were isolated from the stools presented the clinical picture of ileocolitis, but these cases did not differ clinically from cases of iliocolitis in which these bacilli were not found.

Brooklyn Medical Journal.

January.

74 Lecture on Acute Septic Inflammations of the Throat and Neck. Felix Semon.
75 Cholecystitis: Its Diagnosis and Treatment. John B. Deaver, Philadelphia.
76 The Pathology of Cholecystitis. George P. Muller, Philadelphia.
77 Transillumination of the Stomach. H. W. Lincoln.
78 Some Thoughts on the After-care of Laparotomies. Clarence Reginald Hyde.
79 Colles' Fracture. William F. Campbell, Brooklyn.
80 The Clinical Significance of Tube Casts in the Urine. (To be continued.) Thomas C. Craig.
81 Surgical Anesthesia in Childhood. A. F. Erdmann.

Medicine, Chicago.

January.

82 Remarks on a Case of Severe Appendicitis Ending in Recovery Without Operation. Herman B. Allyn, Philadelphia.
83 Air, Food and Exercise in the Prevention of Tuberculosis. A. M. Fernandez De Ybarra, New York.
84 Skiagraph of an Old Ununited Fracture of the Scaphoid Bone Illustrating the Value of the X-ray in the Diagnosis of Such Fractures. Levi J. Hammond, Philadelphia.
85 Three Cases of Acute Hematemesis. F. Gregory Connell, Salida, Colo.
86 Modern Treatment of Specific Urethritis. H. M. Christian, Philadelphia.
87 Lecture on Tropical Medicine. George G. Groff, Porto Rico.

Denver Medical Times.

January.

88 Surgical Treatment of Displacements of the Uterus. R. C. Coffey, Portland, Ore.
89 The Diagnosis of Pregnancy. T. M. Burns, Denver, Colo.

The Vermont Medical Monthly, Burlington.

November 25.

90 Empyema. M. L. Chandler, Barre, Vt.
91 Typhoid Fever. Its Etiology, Modes of Dissemination and Treatment. E. H. Ross, St. Johnsbury, Vt.
92 Chlorosis. W. E. Lazell, Barre, Vt.
93 Conduct of Normal Labor. W. S. Marshall, Montpelier.

Nashville Journal of Medicine and Surgery.

December.

94 Ethics of Gonorrhea in Females. E. S. McKee, Cincinnati, O.

Pacific Medical Journal, San Francisco.

January.

95 Impotency; Medically and Legally Considered. R. W. Shufeldt.
96 Treatment of Localized Tuberculosis Lesions. E. H. Smith, San Francisco.
97 Active Principle Therapy. R. J. Smith, Smithfield, Utah.

The Texas Medical Journal, Austin.

January.

98 Some Remarks on the Operation for Hernia. T. J. Bennett, Austin.
99 Moccasin Bite Treated with Adrenalin Chlorid. R. Menger, San Antonio.

Northwest Medicine, Seattle, Wash.

January.

100 The Technic of Pelvic Operations by Vaginal Section. J. R. Goffe, New York City.
101 Periodic Headache. R. W. Perry, Seattle, Wash.
102 Injuries of the Spine with Report of a Case. W. C. Cox, Everett, Wash.
103 The Electrical Treatment of Chronic Constipation. J. R. Harvey, Sunnyside, Wash.

Virginia Medical Semi-Monthly, Richmond.

January 13.

104 Pneumonia—From the Practitioner's Standpoint. W. E. Anderson, Farmville, Va.
105 Catarrh of the Seminal Vesicles. F. C. Walsh, Washington, D. C.
106 Some Suggestions to the General Practitioners as to the Care of Certain Eye Cases. J. L. Kent, Lynchburg, Va.
107 Papilloma of the Conjunctiva and Cornea. H. H. McGuire, Winchester, Va.
108 Use of Bisulphate of Soda in the Treatment of Typhoid Fever—A Report of Cases. J. E. Cannady, Paint Creek, W. Va.
109 Vaccination—A Few Practical Reflections. W. J. Innes, Aspenwall, Va.
110 Management of Acute General Peritonitis. D. G. Sherrill, Louisville, Ky.

Washington Medical Annals, Washington, D. C.

January.

111 Address, Medical Society of the District of Columbia. Charles W. Richardson.
112 The Importance of Middle-ear Suppuration from the Standpoint of the General Practitioner. Edward B. Dench, New York.
113 A Plea for the Early Treatment of Strabismus. Oscar Wilkinson, Washington, D. C.
114 Case of Patent Urachus; Operation. George T. Vaughan, Washington.
115 Ovarian Cyst, with Abscess, Salpingitis and Appendicitis. J. Ford Thompson, Washington.
116 New Etiology and Prophylaxis of Appendicitis. A. F. A. King, Washington.
117 Pott's Paraplegia, with Report of Three Typical Cases. A. R. Shands, Washington.
118 Case of Extra-uterine Pregnancy, Operation. G. Brown Miller, Washington.
119 Case of Chronic Inflammation of Larynx. D. S. Lamb, Washington.
120 Case of Round-celled Sarcoma of Kidney in a Child; Enucleation. James Kerr, Washington.
121 Case of Appendicitis and Ovarian Cyst with Twisted Pedicle, Complicating Pregnancy. H. D. Fry, Washington.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

January 14.

1 Arteriosclerosis. James Barr.
2 Effect of Salts of Potassium, Ammonium and Bile Salts on Blood Pressure. Arthur Edmunds, London.
3 *Sanatorium Treatment of Phthisis. Is It Worth While? W. B. Ransom.
4 *Results of Four Years' Sanatorium Work in Treatment of Phthisis. Rowland Thurnam and Charles E. Wheeler, Nordrach-upon-Mendip.
5 *Further Report on the Treatment of Phthisis by Iodoform Infusion. Thomas W. Dewar, Dunblane.
6 Treatment of Hemoptysis. C. H. Cattle.
7 Operative Methods—New and Old—in Tuberculosis of Knee joint. William Thomson, Dublin.
8 Tuberculosis and Mortality in Childhood. William P. S. Branson.

3. **Sanatorium Treatment of Phthisis.**—Ransom says that the evidence at hand shows that in sanatoriums as now managed from one-fourth to one-third of the patients regain their working capacity for at least four years, and is strongly of the opinion that those who survive that period will live longer. Moreover, it is certain that when patients are sent to sanatoriums earlier in the disease a larger number of recoveries will occur. If consumptives are to be treated at all, they are best treated in a special hospital, and such a hospital is best placed on a dry, bracing spot, with plenty of pure country air. Such a hospital is a sanatorium. It would be an advantage if each sanatorium had one or more special out-nurses with special training in hygiene to visit patients at their own homes.

4. **Results of Sanatorium Work in Phthisis.**—The total number of cases available for use in this report is 289. The authors divide these into three main classes: (a) Severe (disease affecting either the whole of one lung or considerable areas in both, often complicated with disease of the larynx). (b) Moderately severe (disease affecting not more than one-half of one lung, with or without slight affection of the other—laryngeal diseases occurring in this class also fairly frequent). (c) Slight (disease confined to one lobe of one lung). Class A included 183 cases. Of these 56 died either in the sanatorium or at home within twelve months of commencing treatment. Twenty-three patients died within two years; 30 patients were followed for two years and then lost sight of; 39 patients are in fair health in 1904, and 35 patients are absolutely well (cured). Class B includes 84 cases. Of these 2 died within twelve months, 3 within two years, 19 alive after two years; 11 are in fair health and 40 cases are cured. Class C includes 22 cases. Of these 1 was alive after two years, 1 is in fair health and 20 cases are reported as cured. Taking all the classes together, the percentages are as follows: Died in 12 months, 58 cases, 20.06 per cent. Died within 2 years, 26 cases, 8.9 per cent. Alive after 2 years, 50 cases, 17.3 per cent. In fair health, 51 cases, 17.6 per cent. Cured, 104 cases, 35.9 per cent.

5. **Iodoform Infusion in Phthisis.**—Dewar makes a further report on the treatment of advanced pulmonary tuberculosis by the intravenous injection of iodoform. Since publishing his first paper, he has modified the solution by adding 40 per cent. of liquid paraffin to it. (The original solution was a not quite saturated solution of iodoform in ether.) Liquid paraffin is perfectly soluble in ether, and the resulting solution is blander and less irritating to the veins. It further makes it possible to use much smaller vessels; in fact, the limit is only defined by the size of the needles and the operator's dexterity. Before using, Dewar filters an ounce or so through cotton wool. He has occasionally used iodoform in liquid paraffin alone in the proportion of one-half grain to 10 minims. This preparation is perfectly workable through fine needles and can be used in tuberculous joints or hypodermically in tubercle of the skin and glands and peritoneum. It is painless on injection, and is prepared by crushing the iodoform in the liquid paraffin with a probe in a conical minim glass. It is essential to use a non-actinic all-glass syringe. Dewar uses a half-grain tabloid of iodoform, which is placed in the syringe, crushed with a piston, the ether drawn in and shaken until the powder is dissolved, when a few minims of liquid paraffin are drawn up and the whole is well shaken. To facilitate introduction, to avoid haste and to prevent any escape the point of the needle is sealed by dipping it in hazeline cream. It is desirable, when possible, to inject in daylight, preferably after 3 p. m., because then the veins are generally fullest. Enter the needle vertically and try to pin the top of the curve of the vessel with the point of the needle, and then, pushing it gently on and bringing it into line with the caliber of the tube, insert it halfway. The sensation of going into a space is felt at once. Dewar reports 9 cases, in five of which the disease was arrested, that is, the condition was changed from a state of danger to one of comparative safety. The patients have lost their cough, and in the occasional sputa only a very few tubercle bacilli can be found, although Dewar attaches no especial importance to this. On the whole, however, Dewar feels that the result in these 5 cases is a good one, as the one

and only factor in the treatment was the infusion of iodoform, and to this he attributes their immediate recoveries. In 2 cases the treatment retarded the advance of the disease. The remaining 2 cases are examples of the severe type of the disease and the slight improvement obtained is all that can possibly be expected. Dewar still contends that the continuous successful injection of an ethereal solution of iodoform is followed by improvement, that it is innocuous in moderate doses, and powerful to arrest pulmonary tuberculosis.

The Lancet, London.

January 14.

9 Emergencies in Ophthalmic Practice. A. Maitland Ramsay, Glasgow.
10 *The X-ray Treatment of Leukemia. Report of a Case, with an Abstract of the Literature. J. C. G. Ledingham and R. G. McKerron, Aberdeen.
11 Influence of Rainy Winds on Phthisis. (Continued.) William Gordon.
12 Some Clinical Observations with New Remedies. Nestor Tirard, London.
13 *Hemorrhagic Typhoid Fever. David Blair, Lancaster.
14 Injuries to the Eye by Penetrating Foreign Bodies and the Results After Magnet Operations. Leslie Buchanan, Glasgow.

10. X-Ray Treatment of Leukemia.—Ledingham and McKerron report the case of a boy, aged 11, suffering from splenomedullary leukemia, who was markedly benefited by exposures to the action of the *x*-ray. Before beginning treatment there was marked distension of the abdomen, due to an enormous enlargement of the spleen, the lower border of which reached to within a finger's breadth of the pubes, while the anterior border extended two inches beyond the middle line. Examination of the blood showed the characteristic changes of leucocythemia of the splenomedullary type, red cells, 3,570,000; white cells, 234,000, and hemoglobin, 80 per cent. Differential count: Myelocytes, 48 per cent.; polymorphonuclears, 39 per cent.; small and large lymphocytes, 8 per cent.; mast cells, 6 per cent., and nucleated red cells, 4 per 100 white cells. The *x*-rays were applied over the splenic tumor and the lower epiphyses of the femor. Occasionally they were applied over the sternum and vertebræ. The exposures lasted ten to fifteen minutes every alternate day, but for a period daily exposures were given with no bad effects. In fact, throughout the three months of *x*-ray treatment no constitutional effects were noted apart from slight prickling sensations, lasting for a short time after the applications. There was never any nausea, headache, nor rise of temperature traceable to the *x*-ray treatment. The vacuum tube was always fixed at a distance of somewhat over five inches from the area exposed. One month after the treatment was begun a marked erythema appeared over the splenic area, but it subsided in a few days. Within six weeks the leucocytes dropped to 23,000. On one occasion they dropped to 17,800. The mean of the red cells was about 4,500,000, and on several occasions counts of over 5,000,000 were recorded. The hemoglobin appeared to remain fairly stationary at from 55 to 60 per cent. The ratio of polynuclears to myelocytes rose from 0.5 before the *x*-ray treatment to 2. The myelocytes, however, showed no tendency to disappear altogether, and the blood did not return to normal proportions. Previous to this treatment the patient was more or less bedridden, walking was always difficult and breathlessness with face flushings exceedingly troublesome. Within a month after the commencement of treatment he felt better and was able to walk, and even climbed stairs, without any bad effect. The abdominal girth was diminished about two and a half inches within four months. In the same length of time he gained 12 pounds in weight. The splenic tumor was markedly softer on palpation and is constantly diminishing in size.

13. Hemorrhagic Typhoid Fever.—Blair's patient became ill suddenly. She passed blood by rectum, looked drowsy and ill, and complained of pains all over the body. Her pulse rate was 140; respiration, 44; temperature, nearly 105. She was frequently purged during the day, while some of the stools seemed to consist of nothing but blood. Physical examination revealed nothing abnormal. There was no rash, and no enlargement of the spleen could be felt. The temperature gradually dropped to 101.6, but on the third day again rose to 104.8. On the following day a considerable increase in the tumescence of the abdomen was noted. The urine contained blood; petechiæ had come out on the legs and arms. At the basis of both lungs râles were audible, bronchophony was well marked and there were small areas of tubular breathing. On the sixth day there was considerable epistaxis and bleeding from the gums. At night she had one "fit" and was purged three times, pure blood being passed on each occasion. She died on the seventh day, after having had six more "fits." In attempting to arrive at a diagnosis, Blair considered purpura hemorrhagica, that form of ulcerative colitis known as acute diphtheritic dysentery, and latent typhoid fever. The autopsy disclosed, in the lower eighteen inches of the small intestine, extensive ulceration of Peyer's patches, several of the ulcers having penetrated down to the peritoneal coat. The ulcers were typical of the third stage of enteric fever, and they stopped abruptly at the ileocecal valve. The disease, therefore, was obviously one of those extremely unusual types of typhoid fever exhibiting a hemorrhagic diathesis. The most remarkable feature of the case was the latency of the early symptoms.

Annales des Mal. Génito-urinaires, Paris.

Last indexed XLIII, page 1825.

15 (XXII, No. 13.) Les calculs phosphatiques de la vessie (urinary calculi). F. P. Guiard.
16 De la chirurgie urétérale dans le traitement de la fistule urétéro-vaginale. L. Garovi (Plaisance, Italy).
17 Dilatateur hydraulique modifié pour faire pénétrer la chaleur et le froid secs dans l'uréthre (dilator for application of dry heat or cold). P. Bakaleinik (Kiev).

Presse Médicale, Paris.

Last indexed page 74.

18 (No. 98, December 7.) *Serosa-Fatty Fringe Apparatus of the Heart; the "Apex Joint."—L'appareil séro-graisseux du coeur. P. Poirier.
19 *Le diabète conjugal, existe-t-il? A. Martinet.
20 (No. 99.) Indications de la prostatectomie. E. Desnos.
21 Les progrès de la vaccination. M. Labbé.
22 Les deux indications de la trachéotomie dans la tuberculose laryngée. M. Lermoyez.
23 (No. 100.) Réflexe oesophago-salivaire. H. Roger.
24 *Les lésions cardiaques et les affections rénales. F. Bronowski.
25 (No. 101.) *Traitement du cancer de la langue (of tongue). J. L. Faure.
26 *Sur l'épreuve bactériologique du catgut (tests). Hallion and Carrion.
27 (No. 102.) La tuberculose à la campagne (in French rural districts). R. de Gantijac.
28 Gigantisme et infantilisme. Pagniez.
29 *Traitement des néphrites par la "maceratio" renalina porci. M. Page and Dardelin.
30 (No. 103.) Traitement chirurgical des néphrites chroniques. Le Dentu.
31 Réflexe oesophago-salivaire et réflexe oesophago-lacrymal. P. Carnot.
32 La prétendue hérédite du rachitisme. J. Comby.
33 (No. 104.) *X-ray Treatment of Tinea.—Traitement des teignes tondantes par les rayons X. R. Sabouraud and H. Noiré.
34 Traitement des nourrissons en état de croissance retardée (atrophie, athrepsie infantile). E. Terrien.
35 (No. 105.) Examen clinique du dos d'un enfant (of child's back). P. Desfosses.
36 Climate as Test for Diagnosis and Prognosis.—Le climat Méditerranéen français considéré au point de vue clinique G. Sardou (Nice).
37 La réflexe oesophago-lacrymal. H. Delaunay.

18. Fatty Processes at Apex to Facilitate Its Movements.—Poirier is professor of anatomy at Paris, and here calls attention to a concentric arrangement of fringe-like, fatty processes in that portion of the pericardium which corresponds to the apex. He thinks that they are designed to serve the same purpose as the fatty processes in the knee, to obviate concussions and to facilitate movement. Inflammatory processes, by soldering these leaflets together, must hamper the movements of the apex. In examining the heart of three persons immediately after execution, and in a number of other cadavers, he always found a certain amount of liquid in the pericardium, showing that it is considerably larger than the heart itself. Radioscopy of 50 subjects also always showed traces of an open space during inspiration between the heart and the diaphragm, as if the heart separated from the diaphragm. This he believes is rendered possible by the sero-fatty processes he describes and illustrates. There are usually three, from 4 to 5 cm. long, and they look like a solid mass of sero-fatty tissue, but they can be separated and the

three leaflets turned back, exposing an area of the pericardium, 6x10 cm., over the apex.

19. **Conjugal Diabetes.**—Martinet has encountered 5 cases of diabetes in both man and wife among 25 diabetic patients in his city practice. Debove has found 6 cases among 50 diabetics. This is a far larger proportion than that mentioned by Schmitz and Deléage, who noted only 1.12 and 3.55 per cent. among 2,320 and 478 cases of diabetes, respectively. The discrepancy in the statistics, Martinet thinks, is due to the fact that the latter physicians practice in watering places where they see the patients only for a short time and know little of their family life.

24. **Heart Lesions and Kidney Affections.**—Bronowski has been studying the reciprocal action of heart defects and kidney affections, and has become convinced that the routine method of treating heart affections is based on false premises. In 165 cadavers at Warsaw in which some heart or aortic affection had been the principal malady, he found only 6 in which the kidneys did not show some pathologic changes. In 119 there was chronic and in 3 acute nephritis; in 24 there was cyanotic induration, in 13 parenchymatous congestion, and 1 mere hyperemia. Mitral lesions preponderated, 54 mitral to 50 aortic, and 18 in which the two were associated, a total of 122 accompanying unmistakable nephritis. This is a proportion of 74 per cent. He produced artificial heart lesions in 30 dogs, introducing into the left ventricle a fine needle terminating in a hook, with which he tore some of the valves. Only 4 survived the operation long enough for definite conclusions to be drawn. Two of these presented distinct nephritis. He accepts as established the fact that any interference with the circulation in the heart modifies the composition of the blood, and by inducing stasis in the kidneys depresses their vitality. This favors the development of disease, as the toxins are not eliminated naturally by the kidneys. They pile up in the blood and react on the heart in turn. Bronowski believes that the heart lesion is frequently the first link in the chain which leads to kidney disease. The latter may likewise induce heart disease, but this occurs less frequently. The practical conclusions are that the customary treatment of heart affections is irrational and injurious. Instead of trying to stimulate the kidneys to extra work, they should be spared and the patient should be treated as if nephritis were already established. Drugs to regulate the circulation should be prescribed (iodin, iron), mineral waters, dieting, etc. On the other hand, in case of kidney disease, disturbance in the heart functions should be feared, and treatment should aim to prevent extra demands on the heart. Hot baths, exercise and pilocarpin should be avoided, and greater stress be laid on mineral waters, dieting and a dry, tempered climate at a low altitude. The chief aim of treatment in both the heart and kidney disturbances should be to regulate the circulation.

25. **Treatment of Cancer of Tongue.**—Faure insists on the necessity for operating in two sittings in case of cancer of the tongue, unless the lesion is very small. When the glands have to be excised, this should be done first from without, reserving the direct intervention on the tongue for the very last.

26. **Tests of Catgut.**—Hallion and Carrion found that no cultures developed from certain specimens of catgut in the first bouillon, while some developed as soon as the catgut was transferred to fresh bouillon. They discovered that this was due to the fact that the manufacturer had used some antiseptic—sublimate—in the production of the catgut. This had checked the growth of bacteria. When it had dissolved out the bacteria proliferated unchecked.

29. **Successful Treatment of Nephritis with Pigs' Kidneys.**—Page and Dardelin have treated 18 cases of nephritis by giving a maceration of fresh pigs' kidneys. They say that the results have been so remarkable that they do not hesitate to proclaim that this is the most certain and the most powerful weapon at our disposal in fighting with nephritis. The nephritis was of various types in their cases, some long rebellious to other measures and some with pronounced arteriosclerosis. Some of the patients have been examined one, three and eight months afterward, not a trace of recurrence of albumin having been found in any instance. Arrangements are made with a druggist to have him fill the prescription, which reads: "Maceratio renalina porci, No. 1." The remedy might become repugnant to the patients if they prepared it for themselves. The kidney of a freshly slaughtered pig is cut up, rinsed carefully to remove all traces of urine, and then chopped fine and ground to a pulp. This is placed in 300 gm. of cold physiologic salt solution (7.5 gm. per 1,000). It is set aside in a cold place for three hours, stirred occasionally, and is then ready to use. The patient sips all the reddish fluid in three portions during the day, leaving the sediment. The taste is not bad, especially if it is mixed with a little julienne soup. It should be taken for ten consecutive days with milk or milk-vegetable diet, or merely in addition to the ordinary diet. One of his patients had the nephritis of pregnancy, recurring during three pregnancies; albumin in the third month .17 gm. to the liter. The albumin vanished completely and permanently after eight days of the maceration.

Case 1.—Woman of 35, infectious nephritis; albumin 2 gm. to the liter. On exclusive milk diet for eight days, albumin 1.5 gm. Macerated kidney given for ten days: albumin .2 gm.; milk for fifteen days, and after this, albumin 0. Case 2. Man of 58, lead nephritis; albumin .5 gm. on a milk diet. Macerated kidney for ten days with ordinary diet; albumin 0. Case 3. Man of 78 with infectious nephritis and slight arteriosclerosis; albumin 55 gm. to the liter. After a month of milk-vegetable, unsalted food, albumin .51. Macerated kidney: albumin 0. Case 10. Man of 31, infectious nephritis. Scarlet fever six months previously. Macerated kidney for ten days: albumin 0. Case 15. Woman of 60 with arteriosclerosis and uremia; albumin 2.15 gm. to the liter. Under ten days of macerated kidney, milk, intestinal lavage and serum, the albumin dropped to 1.85 gm. and to 0 the week after.

Several other patients had been addicted to morphin and the nephritis was evidently of a toxic nature, with albumin of .4 to 1 gm. In every instance the albumin vanished completely under ten days' treatment with macerated kidney.

33. **X-Ray Treatment of Tinea.**—Sabouraud's communications on the successful application of the *x*-rays to the treatment of parasitic alopecia areata have been summarized in these columns, page 1265 of the last volume. His report for 1904 is even more encouraging. It is no longer necessary to take the children with tinea into the hospital. Ambulant treatment is proving ample, and instead of the two years formerly required, the cure is complete in three months at farthest. The tube should be at a distance of 15 cm. from the patch to be treated, and a scrap of platino-cyanid paper should be exposed to the action of the center of the tube at the same time (equal to 5 Holzknecht units), but at a shorter distance—8 cm. When the thin sensitized paper has changed to the tint B of the radiometer the exposure is terminated. By watching the shade of the sensitized paper the operator can be confident that there is no danger of a burn, erythem or permanent baldness as long as the shade is below the tint B or the 5 Holzknecht units. After the exposure the part is rubbed with a salve containing oil of cade, which is washed off each morning. The entire scalp is then rubbed with a 10 per cent. alcoholic solution of tincture of iodin, to prevent reinfection from the hairs as they drop out of the exposed patch. Each patch requires a separate exposure. There are no by-effects, not even a headache when the entire scalp has thus been exposed.

Semaine Médicale, Paris.

38 (XXV, No. 2, January 11.) *La néphrite par le sublimé. A. Chauffard.

39 La mortalité de l'anesthésie générale par la scopolamine-morphine.

38. **Nephritis from Use of Corrosive Sublimate.**—Chauffard's patient was a young woman who had ingested a concentrated solution of corrosive sublimate ordered for vaginal injections. In another case a young woman had taken 5 gm. of the sublimate and 10 c.c. of laudanum. There was complete anuria for five days, then emission of 70 c.c. of an acid urine, very slightly albuminous, but containing casts and epithelial cells. The amount increased to 900 c.c. the ninth day, with death on the twentieth from acute pericarditis and heart failure. The first patient recovered after a period of five days of complete anuria. The urine contained merely traces of albumin. Every case of sudden and complete anuria occurring in a healthy subject, free from any kidney history and without

known cause, should suggest an intoxication, especially if accompanied by serious symptoms of acute gastroenteritis. Mercurial intoxication should be among those suspected, even in the absence of stomatitis and salivation, neither of which were noted in the above cases until after several days. Even if the patients recover, a tendency to nephrosclerosis will probably be left. In the patient who recovered, functional tests of the kidney indicated reduced permeability on the part of the kidneys and progressively rising blood pressure. The anatomic lesions in the kidneys in the fatal case reported were such as to indicate that the glomeruli were the only parts of the kidneys spared by the poison. Consequently, in treating a case of sublimate poisoning, it is useless to give ordinary diuretics. The only one that can be expected to act is salt solution. More than 3 quarts were injected in four days in the case reported, with eminently favorable results. No one need fear to induce anasarca by injecting these large amounts of salt solution in the complete anuria of these patients. They have lost such large amounts of water by their excessive vomiting and diarrhea that they are in need of water. The arterial pressure is low. The condition resembles that of the anuria in cholera, but the saline infusion should be suspended if the blood pressure rises above normal or if edema develops. Toxic anuria never indicates surgical interference. The only thing that can be done is to overcome the renal obstacle immediately, while the tolerance of the organism still persists. It is a question of life or death, and no temporizing is allowable in anuria.

Archiv f. Verdauungs-Krankheiten, Berlin.

Last indexed XLIII, page 2053.

40 (X, No. 6, December.) *Enteralgie und Kolik. Pathogenese und Behandlung des arteriosklerotischen Leibwehs (colic). Max Buch (Helsingfors).

41 *Determination of Proteolytic Power of Gastric Juice, with Description of a Modification of Hammerschlag's Method and of a New Method.—Bestimmung der proteolytischen Kraft des Magensaftes, nebst Beschreibung einer Modifikation des Hammerschlagschen Methode und einer neuen Methode. H. W. Bettman and J. H. Schroeder (Cincinnati).

42 *Ueber die Resorption von Atropin, Salol, Salizyl-säure und Rhabarber im Magen (gastric absorption of salicylic acid, rhubarb, etc.). Z. Inouye and T. K. Kashiwado (Chiba, Japan).

43 *Ueber Oesophagitis dissecans superficialis. N. Stern (Saratov).

44 Detection of Dissolved Albuminoids in Feces.—Zur Frage des Nachweises gelöster Eiweisskörper in den Fäzes. O. Simon (Carlsbad). Reply. H. Ury.

40. **Arteriosclerotic Abdominal Colic.**—Buch concludes his monograph on this subject with a discussion of the pathogenesis and treatment. From a material of 25 cases he preaches that arteriosclerotic colic is in reality neuralgia of the lumbar sympathetic. This fact is established by the exact similarity between the spontaneous pains and those induced by pressure on the sympathetic. Even the irradiations of the pain are identical, showing that the colic is, in fact, neuralgia of this portion of the sympathetic nerve, with possible involvement of the celiac, aortic and hypogastric plexuses. The neuralgia is due to irritation. The aortic plexus lies close to the aorta, and any inflammation of the adventitia is liable to affect the plexus also. Inflammation of the adventitia is a common occurrence in arteriosclerosis. Periarteritis is an almost constant accompaniment of arteriosclerosis, and the involvement of the adjacent nerve is almost inevitable. The superior mesenteric ganglion actually surrounds the origin of the superior mesenteric artery, and this is probably the reason why the epigastrium is so frequently the location of the arteriosclerotic pains. The sclerosis of the splanchnic vessels entails, further, hyperemia or inflammation of the lumbar sympathetic as an inevitable consequence, either from sclerosis of the nerve vessels or collateral congestion. The fact that arteriosclerotic colic usually comes on after physical exertion sustains this assumption. The additional congestion in the vessels of the plexuses, induced by exercise, superposed on the hyperalgesia resulting from the permanent congestion, must necessarily result in pain. A further factor in the colic is the occurrence of spasms in the vessels. It is possible the congestion may entail excessive functioning on the part of the suprarenals. This hypersecretion of adrenalin may induce cramps, as is seen in experimental research with it. Vaquez reported last year that his experiments revealed a marked tendency to cramps on the part of sclerosed vessels, and, further, that hyperplasia of the suprarenals was unmistakably evident in such cases. Others have reported corroborating findings in nearly a dozen cases of arteriosclerosis, the hyperplasia of the suprarenals observed indicating hyperfunction of these organs. Buch concludes that the process in angina pectoris is much like that in arteriosclerotic colic, and they may occur together. Treatment of arteriosclerotic colic based on these premises is remarkably effectual. Strophanthus may not only abort an attack, but may ward off recurrences. As the pain is relieved by pressure on the abdominal plexuses and aorta, massage seems to be indicated, combined with Swedish movements. More or less permanently favorable results were obtained in his cases by the medicinal and general treatment outlined. In some of the patients the manifestations of the arteriosclerotic condition were banished for several years. The prevailing pessimism in regard to arteriosclerosis is not justified. The cases on record of local arteriosclerosis of the extremities, from nervous influences alone, teach that the nervous system should not be ignored in the treatment. Both Edels and Basch have observed cases in which the blood pressure was permanently raised by nervous influences, and the latter had occasion to note the development of arteriosclerosis later in such patients. He calls the condition "latent arteriosclerosis," but Buch thinks that in reality it is one of actual sclerosis, but at this stage is limited to the splanchnic vessels only.

41. **Determination of Digestive Activity of Gastric Juice.**—See THE JOURNAL, xli, page 1229, 1903.

42. **Absorption of Atropin, Salol, Salicylic Acid and Rhubarb in Stomach.**—Experiments on dogs and cats demonstrated that atropin and rhubarb are not absorbed in the stomach. Salol taken into the isolated stomach of dogs or injected subcutaneously was evidently absorbed, decomposed in the blood and its cleavage product, salicylic acid, eliminated in the urine. Salicylic acid was also absorbed in the stomach and appeared promptly in the urine.

43. **Superficial Dissecting Esophagitis.**—Stern describes a case of this rare affection of which he found only 4 cases recorded in the accessible literature, one from Moscow and one from Warsaw. Birch-Hirschfeld's patient was a hysteric woman who expelled a membranous tube 20 cm. long after three days of illness. She stated that she had vomited a similar mass several years before. He explained the affection as a pseudo-croupous inflammation of the esophagus, the process most acute in the subepithelial tissues, resulting in the casting off of the epithelial lining. All the patients recovered without formation of cicatricial tissue. The regeneration of the epithelium commences probably under the membrane formation.

Deutsche medicinische Wochenschrift, Berlin and Leipsic.

45 (XXX, No. 51, December 15.) *Syphilitische Erkrankungen der Circulations-Organe. von Düring (Kiel).

46 *Aetiologie und Pathogenese des Erythema nodosum. E. Hoffmann.

47 *Apparatus for Narcosis During Operations Under Plus Pressure. H. G. Engelken (Czerny's clinic, Heidelberg).

48 Perforation of Living Child Indispensable Under Certain Conditions.—Die Unentbehrlichkeit der Perforation des lebenden Kindes. K. Baisch.

49 *Pseudo-Sclerose. A. Fickler.

50 Zur Kasuistik des Exsudatum pleuriticum pulsans und Exsudatum pleuriticum adiposum. K. Engel (Budapest).

51 Action of Sea Climate on Asthma.—Zur Wirkung des Seeklimas auf das Asthma. Ide (Amrun).

52 Injektions-Therapie bei Syphilis. Schnabel (Magdeburg).

53 Proposed Anti-Tuberculosis Bill in Denmark.—Entwurf, etc. Böttcher.

54 *The Russian Wounded at Chemulpo.—Zum Bericht von Dr. Wada über die russichen Verwundeten. M. Bantschikoff.

45. **Syphilitic Vascular Affections.**—This address, read by von Düring at the recent International Congress of Dermatology, deals especially with syphilitic aortitis and its two forms the arteritis leading to partial or total occlusion of the vessel, and that which reduces the resistance of the walls of the vessels by cicatricial changes. The latter variety he calls Doehle-Heller's syphilitic aortitis, and regards it as by far the most frequent cause of aneurisms. It is so characteristic that a retrospective diagnosis of syphilis can be based on it alone.

Syphilis has been demonstrated in the antecedents of from 56 to 85 per cent. of the cases of aneurism on record. He emphasizes that the syphilitic aortitis entailing aneurism has nothing to do with chronic deforming endaortitis, although they may be associated in elderly subjects. The latter may entail rupture, hematoma or dissecting aneurism, but not the true aneurism observed in syphilitics, which develops in young subjects, almost invariably before 50. The wall of the vessel in true syphilitic aortitis consists almost exclusively of a normal or thickened intima with cicatricial connective tissue, lined with endothelium. The media, the musculature and its elastic tissue have been destroyed. The wall of the artery does not offer the normal resistance, and it stretches, even under normal blood pressure, entailing the formation of an aneurism in time. Primary syphilitic lesions of the heart, gummata in the musculature, are rare and generally casual findings. Their slow development and the variability of their site lead to indefinite clinical manifestations. A history of lues and the lack of any other findings may sometimes suggest a gumma in the walls or septum as explanation of vague heart disturbances in younger subjects. Interstitial syphilitic myocarditis is more frequent and more definite. It is usually secondary to aortitis and the consecutive narrowing or occlusion of the coronary arteries. This affection of the coronaries accompanying the dilatation of the aorta and with resulting insufficiency of the aortic valves, and the sequence of cardiac insufficiency, angina pectoris and sudden death form a chain of ills for which the syphilitic aortitis is directly responsible. The benefits obtained by potassium iodid and mercury in the treatment of many affections of the circulatory organs furnish the final demonstration as to their syphilitic nature. Quincke and others have published many instances of remarkable benefit obtained with mercury and iodid in aneurisms when there was apparently nothing to indicate syphilis in the case. Runeberg has reported complete resorption of gummata in the heart walls and muscle under specific treatment. The syphilitic basis also explains the fine results attained in angina pectoris and aortitis with mercury and iodid, especially the latter, given systematically and perseveringly. Even in case of large aneurisms of the aorta and advanced gummatous or indurative myocarditis, great relief is liable to be obtained, although a complete cure can not be anticipated. True syphilitic aortitis should not be classed as arteriosclerosis, as there is no calcification of the artery.

46. **Erythema Nodosum.**—Hoffmann has invariably found an inflammation in the walls of the larger subcutaneous veins in every case of erythema nodosum in his experience. This occurs in both the idiopathic and the symptomatic forms. There is no actual thrombosis, and the process may subside without leaving appreciable traces. In one idiopathic case he found the staphylococcus albus. The inflammation always seemed to start at the forking of the vein.

47. **Plus Pressure Narcosis.**—Engelken adds another to the four modes of applying narcosis while the subject is breathing under plus pressure. His apparatus is designed to allow the anesthetist to sit in the cabinet into which the head of the subject projects. This leaves the operator and his assistants free to operate under normal conditions, with access to instruments, etc., and allows the operation to be done before spectators. The large box or chamber is made light and movable, and the ventilation is so contrived that the fumes of the anesthetic are conducted away without reaching the anesthetist. The other modes of applying narcosis under plus pressure that have been suggested are the use of a diver's helmet for the subject, or of a mask which closes mouth and nose airtight, or Kuhn's intubation, or tracheotomy. The air introduced through the tracheal tube can be under the required plus pressure, as Petersen has practically demonstrated. The details of Engelken's box and its workings are illustrated.

49. **Pseudo-Sclerosis.**—Fickler describes 2 cases which clinically presented the picture of multiple sclerosis of the central nervous system, but anatomically, all the signs of it were lacking. He explains the cases as a psycho-neurosis which clinically exhibited a great analogy to multiple sclerosis. Important points for differentiation are the pronounced tremor, frequently of the oscillating type, while the spastic phenomena are less striking than in true multiple sclerosis. Further points are the peculiar changes in the mentality, the emotional excitability and the eventual development of hallucinations. There are only 11 cases of this pseudo-sclerosis in the literature, to his knowledge. The subjects are usually nervous predisposed, either by heredity, syphilis, alcohol or typhoid, although in some cases no inciting cause could be determined. The first symptom is usually a weakness of the legs. The arms may also become weak, and there is sometimes numbness in the hands, strabismus, headaches, pains in the limbs, vertigo or double vision. Permanent paralysis was not observed in any instance, although the main feature of the affection as it progressed was the disturbance in the motor functions. The tremor is the most constant and striking symptom, with twitchings and sometimes disturbances in speech. The tendon reflexes were always more or less exaggerated, but the bladder and rectal functions were not affected. The affection progresses slowly but surely, death generally occurring from exhaustion or intercurrent disease. Thirteen years was the longest limit in any case, the general weakness or exacerbations entailing a fatal termination in about a year in some instances. Certain traits of hysteria may be noticeable in the clinical picture, but Strümpell protests against classing pseudo-sclerosis as hysteria.

54. **Reply to Wada's Article on the Russian Wounded.**—The Japanese surgeon's account of the surgical aid rendered the Russian wounded at Chemulpo was mentioned in these columns on page 433 of the last volume. Banschtikoff produces evidence to show the inconsistencies of the Japanese account, the omissions of certain important data from Wada's personal report, which place some of the results in another light, but he mentions with appreciation the care given the Russian wounded in the Japanese hospitals and their sincere gratitude. He adds that the alleged statements made by the Russians to the Japanese were probably due more to the zeal of the Japanese interpreter than to the Russian speakers.

Deutsche Zeitschrift f. Chirurgie, Leipsic.

Last indexed XLIII, page 167.

55 (LXXV, No. 1.) Die Mobilisierung des Duodenum nach Kocher zur Entfernung retroduodenal liegender Gallen-Steine. E. Payr (Graz).

56 Ueber die Beziehungen der Enchondrome zu den multiplen cartilaginären Exostosen. A. Läwen. 3 cases.

57 Ueber Stauungsblutungen nach Rumpf-Kompression (hemorrhage from stasis). H. Wienecke. 1 case.

58 Pyonephrose bei Verdoppelung der rechten Niere (2 kidneys on right side). A. Linck.

59 *Zur Diagnose der syphilitischen Affektionen des Pankreas. N. Trinkler (Kharkov).

60 Schuss durch das Ventrikel-Septum des Herzens. Herznaht. Heilung. (successful suture of firearm heart wound). W. Schubert (Hamburg).

61 Beitrag zur Aetiologie der gutartigen Pylorusstenose: Pylorusstenose bedingt durch Leber Echinococcus. Axhausen.

62 Endresultate der Radicaloperation von Hernien, speziell der Inguinalhernien. P. Daiches (Berne).

63 Hyperemesis lactentium (Meinhard Schmidt) oder congenitale Pylorusstenose durch Operation geheilt. H. Grisson.

59. **Syphilitic Affections of the Pancreas.**—In Trinkler's case a gummatous affection of the pancreas was diagnosed as cholelithiasis, and an operation was performed. The patient was a very emaciated woman of 28. The organs were found to be comparatively sound—with the exception of the pancreas—and as the findings in this organ suggested gummata, the abdomen was sutured without further interference. Specific treatment was commenced the sixth day, and the icterus and other symptoms which had been ascribed to gallstones gradually subsided.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed XLII, page 526.

64 (LVIII, No. 4.) Zur Aetiologie und Pathogenese des Keuchhustens (bacteriology of whooping cough). P. Reyher (Heubner's clinic, Berlin).

65 Ausbruch tuberkulöser Meningitis im Anschluss an acute eitrige Otitis media, in dem einen Falle compliciert mit chron. Hydrocephalus internus. Haike.

66 *Human Milk in Treatment of Acute Catarrh of Small Intestine.—Die Frauenmilch in der Therapie des akuten Dunndarmkatarrhs. B. Salge.

67 *Limit of Assimilation of Sugar in Children.—Die Assimilationsgrenze für Zucker im Kindesalter. A. Greenfield.

66. **Human Milk in Catarrh of Small Intestine.**—Salge insists on the necessity for individualizing cases of gastrointestinal disturbances in infants. What is beneficial in certain forms may be harmful in others. Catarrhal conditions in the small intestine cause a clinical picture which suggests that food rich in fat should be avoided as tending to magnify the toxic manifestations. For this reason, breast milk is almost sure to have a highly unfavorable action in such cases. He relates a number of typical experiences to sustain this view.

67. **Limit of Assimilation of Sugar in Children.**—Greenfield's tabulated statistics demonstrate that the assimilation of sugar in children is a matter of age. Neither the weight, nourishment nor certain morbid conditions affect it, but it is directly proportional to the age. By the tenth year it has attained the same limit as in adults.

Monatsschrift f. Geb. u. Gynäkologie.

Last indexed XLIII, page 168.

68 (XX, No. 4, October.) *Erfolge und Aussichten der künstlichen Frühgeburt (artificial premature delivery). Krömer.
69 **Fetal Urination.**—Experimentelle Beiträge zur Lehre von der Absonderung und Entleerung des Harnes im fötalen Leben. A. Kreidl und L. Mandl (Vienna).
70 Weitere Beiträge zur Technik der mechanischen Dilatation mit spezieller Berücksichtigung ihrer Erfolge in der Eklampsie-Behandlung. E. Pollak (Vienna).
71 Die Histologie des Eierstockes im Klimakterium (ovary in menopause). A. Weber (Greifswald).
72 *Anatomische Untersuchungen über den Infektionsweg bei der Genital Tuberkulose des Weibes. (Concluded.) P. Rosenstein (Königsberg).

68. **Results and Prospects of Artificial Premature Delivery.**—Kroemer reviews the experiences at Giessen and deduces the indications to be learned from them. He accepts a true conjugate diameter up to 7 cm. as indication in case of a shallow pelvis, and up to 7.5 cm. in case of a generally contracted pelvis. The bougie and spontaneous delivery are generally sufficient in case version is contraindicated. The hystereurynter with subsequent version and forceps are adapted for all flat pelves, especially for multiparæ. He thinks that the thirty-sixth week is the earliest limit for interference. The average duration of the birth, after the use of bougies, was from twenty-four to forty-eight hours, while with the hystereurynter it was only fifteen. The morbidity in 92 cases of contracted pelvis was 15.4 per cent., but in only 7.5 per cent. were the genital organs responsible for the fever. The mortality was zero. Out of the 82 children born alive, 66 were dismissed in good condition. The generally contracted, shallow pelves gave the highest mortality among the children.

72. **Genital Tuberculosis in the Female.**—Rosenstein's examination of 7 cases of tuberculous affections of the female genitalia always resulted in the discovery that the peritoneum and tubes were affected as well as the ovaries. He doubts whether a tuberculous affection of the ovaries can exist alone. He adds that tuberculosis in the tubes is always bilateral and locates first in the mucosa. Caseous degeneration occurs early in both the tubes and the ovaries. The proliferations suggesting adenoma, which are sometimes found in the tubal mucosa, do not necessarily imply a tuberculous affection. The histologic changes in the tissues of the adnexa affected by tuberculosis are so characteristic that it is unnecessary to stain for bacilli.

Therapeutische Monatshefte, Liebreich's, Berlin.

Last indexed page 431.

73 (XVIII, No. 5.) *Behandlung der Bubonen-Pest mittels intravenöser Anwendung von Yersin's Serum. L. Cairns.
74 Balneotherapy During Period Preceding and Following Puberty in Girls.—Ueber Bäderbehandlung in der Geschlechtsperiode der Menarche. E. H. Kisch (Prague-Marienbad).
75 *External Application of Salicylic Acid for Internal Affections. —Behandlung gewisser innerer Erkrankungen durch äusserliche Anwendung des Salizyls in Form von "Rheumasan." M. Behr.
77 *"Insect-Bite Icterus," and Treatment of Gallstone Affections. —Ueber Insectenstich-Ikterus, nebst Beiträgen zur Therapie der Gallenstein-, etc., Krankheiten. W. Bauermeister.
78 Hydrogen Dioxid for Cutaneous and Venereal Affections.—Ueber die Verwendung von chemisch reinen Wasserstoffsuperoxyd besonders bei Haut- und Geschlechtskrankheiten. P. Richter (Berlin).
79 Influence of Formaldehyd on Determination of Elements of Urine.—Einfluss des Formaldehyds auf den Nachweis der normalen und pathologischen Harnbestandtheile. C. Strzyzowski.

73. **Yersin's Serum in Plague.**—Cairns' experience with serum treatment was eminently favorable.

75. **Salicylic Medication Through the Skin for Internal Affections.**—Behr has applied a salicylic preparation in the form of a soft soap in 30 cases of acute rheumatism, chronic arthritis, intercostal or trigeminal neuralgia, migraine, lumbago or pleurisy. He is enthusiastic over the fine therapeutic results obtained when the preparation is massaged into the skin at the most painful points. The presence of salicylic acid in the urine was soon apparent afterward, but it did not cause the usual sweating, and the stomach was spared the irritation from the drug. He applied it once a day for from six to eight weeks, as a rule. His subjects were all tuberculous, as he is assistant in a sanatorium.

77. **"Insect-Bite Icterus."**—Bauermeister had occasion to study in his own person a severe case of icterus with general dyspepsia and gastrointestinal catarrh, preceded by urticaria. The entire syndrome developed while traveling, after a night in which he had been bitten by numerous bedbugs. His trouble proved rebellious, but finally yielded to systematic stimulation of the bile secretion. This he accomplished with salicylic acid and sodium oleate. His personal experience and clinical observation compel him to extol this combination as remarkably effectual for gallstone and similar affections. His formula is .1 gm. each of salicylic acid and the sodium oleate, to which he adds a little menthol and phenolphthalein. He took three or four of these pills morning and evening, with a glass of hot water, sipped slowly, supplemented by a hot-water bottle to the gall-bladder region for an hour or so. He is convinced that systematic use of these therapeutic measures might succeed in many cases where all others fail. He calls attention to Kuhn's recent indorsement of salicylic acid as a bile-promoting remedy. Both he and Kuhn came to this conclusion independently. (Kuhn's work in this line was reviewed in these columns on page 1095 of the last volume.)

Grèce Médicale, Syra, Greece.

80 (IV, No. 23.) *Coloration du bacille de la tuberculose. A. Gabriélidés (Constantinople).
81 *Sur 3 cas de lepra tuberculeuse traités par la méthode mixte de Unna. N. Moraites (Athens).
82 (Nos. 26-27.) *Contact Infection of Typhus. A. Panayotatou (Alexandria).
83 Report of II Panhellenic Congress, Athens, May 17-23, 1903. (Continued.)
84 (V, No. 2.) Oysters and Typhoid Fever in Constantinople. C. D. Remlinger.
85 (Nos. 3-6.) *Systematic Exploration by Large Opening in Case of Abscess in Right Lobe of Liver.—Sur 25 cas d'exploration chirurgicale méthodique des abcès du lobe droit du foie à ciel ouvert. A. P. Petridis (Alexandria).
86 (Nos. 7-10.) Sur quelques troubles de la menopause. M. N. Cairis.
87 Sur 2 cas de chylurie filarienne. C. D. Remlinger (Constantinople).
88 (Nos. 11-12.) *Relations Between Malaria and the Circulatory System. Triantaphyllides, Kanellis and others.

80. **Rapid Stain for Tubercle Bacillus.**—Gabriélidés' technic allows the whole procedure to be done in less than thirty seconds. He modifies the Ziehl formula to the following: 1 gm. fuchsin, 10 c.c. of absolute alcohol, 5 gm. of phenic acid and 40 c.c. of distilled water. He dissolves the fuchsin in the alcohol and mixes the acid with the water, then combines the two and filters. Three drops of this mixture are added to the specimen of sputum, and it is heated for twelve seconds until it steams without burning. The slide is then rinsed and decolorized with 25 per cent. nitric acid in alcohol, rinsed again and stained in methylene blue. The nitric acid decolorizes instantaneously all the elements of the sputum except the bacilli, and the whole process is so rapid that fifteen seconds are ample for the heated sputa and thirty seconds when cold.

81. **Unna's Mixed Treatment of Leprosy.**—Ichthyol internally and externally with sulphur baths and friction of the lesions with ichthyol soap formed the treatment adopted in the 3 severe cases reported. One was apparently entirely cured and the 2 others were very much improved.

82. **Contact Infection of Typhus.**—Panayotatou's patient was a physician attending some cases of typhus in the Alexandria prisons. In giving one of his patients an injection the patient pushed the syringe away and it pricked the physician

in the arm. The spot was disinfected at once, but symptoms of typhus developed after a typical incubation, and the physician succumbed.

85. **Large Exploratory Incision in Case of Abscess in Liver.**—Petridis gives the particulars of 25 cases of abscess in the liver in which the exact site of the lesion or its character could not be determined, or in which there was a suspicion that there might be more than one abscess. He incises with the actual cautery—seldom with the knife—from the mammary line at the seventh rib toward the axillary line for from 12 to 15 cm. or more, and resects three or four ribs for a distance of from 2 to 3 cm. He then incises the diaphragm with the actual cautery and sutures it with the soft parts to the upper lip of the original incision. Compresses are then worked under the concave surface of the liver, and the organ then can be inspected at ease, palpated and a needle inserted for exploratory puncture as indicated. He gives the details of his 25 cases, insisting especially on the fine results attained by this technic even in extremely debilitated subjects. An illustration of one case shows the gaping wound extending from the mammary line well beyond the axillary line, the incision held open with a retractor, gaping as wide as the diameter of the patient's arm. The horizontal incision along the center of the area of liver dullness allows easy examination of this organ, while the pleural cavity is scarcely infringed on. The benignity of this operation and the extensive oversight it allows over the conditions, permitting the discovery of otherwise inaccessible abscesses, commend it to such a degree that he urges physicians to advise it in the early stages so that the surgeon will be able to interfere in time. The essential features of the operation might be expressed in the term "horizontal polypleurodiaphragmotomy."

88. **Relations Between Malaria and the Circulatory System.**—This was one of the questions discussed at the last Panhellenic Medical Congress at Athens. Triantaphyllides of Batoum mentioned that in an experience of 12,000 cases of malaria he had encountered 67 in which there was a cardiopathy for which the malaria was apparently directly responsible. Of this number 30 were affections of the endocardium, complicated by pericarditis in 3; 26 were cases of myocarditis; 1 of aortitis and 1 of pericarditis. About 23 of the patients with an affection in the endocardium had some mitral complication, and in 16 there was ulcerative endocarditis. Mantonakis of Crete has found that the heart fibers become atrophied. Manoussos of Athens attributes merely a predisposing influence to the malaria in the production of endocarditis and phlebitis in malarial subjects. He thinks that the hypertrophy of the heart noted in chronic malaria is generally due to interference with the circulation from the enlargement of organs below. He thinks it probable that chronic aortitis may be induced by malaria, and Kanellis of Athens believes that diffuse or, at least, very extensive sclerosis of the vessels is liable to result from malarial infection. He mentions among the functional disturbances encountered in malaria slow or intermittent pulse, gallop rhythm, soft souffles, mesosystolic or mesodiastolic and reduplication of the second pulmonary sound. In very rare instances the malaria may induce an actual organic lesion in the circulatory organs, endocarditis, myocarditis, hypertrophy or dilatation of the heart.

Roussky Vratch, St. Petersburg.

Last indexed page 336.

89 (II, No. 50.) Toxic Manifestations During Development and Resorption of Effusions of Cardiac Origin.—O toxinitcheskikh yavleniyakh pri razvitii i vsasyvanii vodyanok serdetchnago proiskhozhdeniya. A. I. Kostkevitch.
90 Conditions for Development of Endogenous Suppuration in Operations on the Eyeball.—O nyekotorikh usloviyakh pri razvitiya nagnoenlya endogennago proiskhoxhdeniya pri operatziakh na glaznom yablokye. T. A. Korolkoff.
91 Advantages of Cesarean Section with Fritsch Incision in Case of Deformed Pelvis.—Kesarskoe syetchenie po povodu obshtche- i koso-suzhennago taza. M. M. Mirinoff.
92 *Spinal Analgesia in Gynecology.—Spinno-mozgobol obezbolevanie v gynecologii. A. U. Katz.
93 Successes of Modern Cystoscopy.—Uspyekhi sovremennoi cystoscopii. N. A. Mikhaeloff.
94 (No. 52.) Ob etiologii raka (of cancer). S. I. Serkovsky.
95 *K lyetcheniu placentæ previæ centralis. B. A. Liboff.
96 (III, No. 1.) *Surgery of Biliary Passages.—K khirurgii zheltchnikh putei. S. P. Fedoroff.
97 Pathogenesis of Hypertrophic Biliary Cirrhosis of Liver.—K voprosu o patogenezi t. naz. hypertr. zheltushnikh cirrhosov petcheni. N. N. Kirikoff.
98 Bacteriologic Differentiation of Diphtheria.—Bakteriologitcheskii sposob v raspoznavaniya difterii. B. N. Tchorno-Schwartz.
99 *Sea Bathing for Certain Eye Affections.—O lyetcheni nyekotorikh glaznykh zabolyevanii morskimi kupaniyami. S. P. Roshtchevsky.

92. **Spinal Analgesia in Gynecology.**—Katz advocates spinal analgesia in gynecology when an operation is needed at once and the patient's condition renders either chloroform or ether hazardous.

95. **Treatment of Central Placenta Previa.**—Liboff agrees with those who advocate cesarean section as the routine treatment in threatening cases of central placenta previa. He describes 3 cases in which it was applied with the best results for both mothers and children. He thinks that a laparotomy is indicated for this serious condition to the same extent as for rupture of an extrauterine pregnancy. The only difference is that in the former case the hemorrhage is external, while in the other, it is internal.

96. **Surgery of the Biliary Passages.**—Fedoroff analyzes a number of instructive cases from his extensive experience and emphasizes the necessity for co-operation between the physician and the surgeon in this borderland of the affections of the biliary apparatus.

99. **The Seashore for Certain Eye Affections.**—Roshtchevsky urges that the building up of the general health by a stay at the seashore is a most important factor in the cure of certain affections of the eyes. Beside this, an unmistakably favorable action on the eyes from the sea bathing and from certain mineral waters is unmistakably apparent. He recommends the seashore in a temperate climate as particularly beneficial in case of trachoma.

Hygiea, Stockholm.

Last indexed XLIII, page 1430.

100 (LXVII, No. 6, June.) Om nagra former af kronisk peritonit i bukens vänstra sidoregion. B. Carlson.
101 Om difteri i Kisa 1899-1902. G. Thollander.
102 *Medical Report of the Swedish South Pole Expedition, 1901-1904.—Hälso- och sjukvarden under den svenska sydpolarexpeditionen Okt., 1901-Jan., 1904. E. Ekelöf.
103 (No. 7.) *School Myopia in Sweden.—Om förekomsten af närsynthet i Djutsholms skola jämte nagra därtill knutna betraktelser. J. Widmark.
104 Iakttagelser vid gonorré hos män. M. Möller.
105 Innervation of the Peritoneum.—En undersökning öfver nervfördelningen i främre bukväggen i synnerhet i dess peritoneum. M. Ramström.
106 *Nagra ord om den sa kallade Morbus Banti. E. Aspelin.
107 (No. 8.) Christian Loven. Obituary.
108 *Indications in Appendicitis.—Om indikationerna for operation vid appendicit samt redogorelse for a Sabbatsbergs sjukhus opererade fall. E. S. Perman.
109 *Diazo-Reaction in Pulmonary Tuberculosis.—Studier öfver diazo-reaktion vid lungtuberkulos och dess prognostika betydelse. A. Widstrand.
110 *Ibid. I. Holmgren.
111 Nagra komplikationer vid herpes zoster ophthalmicus. G. Ahlstrom (Göteborg).
112 *Chronic Arsenic Poisoning from Wall Paper and Paint and Biologic Test for Arsenic.—Om kroniska arsenikförgiftningar särdeles genom tapeter och färger samt om denn biologiska metoden att upptäcka arsenik. F. E. v. Sydow (Göteborg).

102. **Report of Physician Accompanying Polar Expedition.**—Ekelöf was the medical officer attached to the Swedish Antarctic expeditions of 1902 and 1903. He here gives a detailed report of sanitary and health matters, the food and other particulars, with the morbidity. The general health of the party was good for the most part. He gives a number of suggestions important for those contemplating trips to cold regions, especially in regard to prevention of scurvy.

103. **School Myopia in Sweden.**—Widmark tabulates the statistics from a number of schools and colleges, the proportion of shortsighted pupils constantly increasing with the school demands, as in other countries. He found that girls were more subject to myopia than boys, or at least to its severer degrees, and thinks that this should be borne in mind in selecting a life work. He found normal visual acuity in 97 per cent. of the 418 children in the Djursholms schools (1903), while the proportion was not over 79 in any of the Stockholm schools (1884).

106. **Banti's Disease.**—Aspelin enumerates among the diagnostic points in this disease the lack of anything in the his-

tory to explain the symptoms, their insidious onset in previously healthy or nearly healthy subjects in early middle age, and their chronic course; the moderate anemia of the secondary type without increased leucocytosis, but with increase in the mononuclear elements; the tendency to hemorrhages, and the evening temperature. He has had occasion to observe 3 cases at Helsingfors; the subjects were from 24 to 27 years old, and subjective improvement was obtained with iron, quinin, methylene blue, salicylic acid, or arsenic. One case suggested malaria, which was very prevalent in Finland at the time, but no plasmodia could be discovered in the blood, and its aspect was not that of malaria. Berg's case also coincides with the type established by Banti and Osler, and the patient, a man of 36, recovered complete health after splenectomy in 1897. Lindfors has also reported a case cured by splenectomy.

108. **Appendicitis.**—Perman tabulates the particulars of the 268 cases of appendicitis operated on during the last five years at the Sabbatsberg hospital. The results, he thinks, confirm the benefits of early operating, and of an interval operation after subsidence of even a slight attack.

109-110. **Diazo Reaction in Tuberculosis.**—Widstrand has made more than 2,000 examinations of the urine for the diazo test in 204 consumptives. Forty died in the hospital, and in 37 of these the diazo reaction was constant. In the 3 others the clinical diagnosis of pulmonary tuberculosis was not confirmed by the autopsy. In the mild or chronically latent cases the reaction was almost invariably negative. It is thus valuable for the prognosis and sometimes also for the differentiation. It is especially important when circumstances, such as frequent hemorrhages, forbid physical investigation. The positive reaction may turn the scale in favor of the assumption that the case is too far advanced for hope of a cure.

Holmgren gives excerpts from the hospital records of 158 cases of pulmonary tuberculosis, the results confirming the preceding conclusions. He adds that the stronger the reaction the nearer impending death, the interval not longer than from six to eight weeks. When the diazo is distinct but not strong, the maximal life expectancy can be placed, with great probability, at eighteen months, the average at six months. Among the patients in the third and in the advanced second stage, who presented a dubious or negative reaction, only 16 and 9 per cent., respectively, died within this average limit. A single positive reaction is sufficient for these deductions, and, as the test is so simple and easy, it should be currently adopted as a practical and valuable guide to prognosis. It enables those with a specially unfavorable outlook to be distinguished among the advanced cases and their life expectancy to be stated with greater exactness than by the physical findings alone.

112. **Chronic Arsenic Poisoning.**—Sydow reviews the literature on the subject of arsenic poisoning from wall papers, paint, etc., and advocates, as both convenient and accurate, Gosio's method of detecting the presence of arsenic by the growth of the *Penicillium brevicaule* on the suspected substance. In the presence of arsenic it disseminates a gas resembling the odor of garlic.

Books Received.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PRACTICAL PEDIATRICS. A Manual of the Medical and Surgical Diseases of Infancy and Childhood. By Dr. E. Graetzer, Editor of the *Centralblatt fur Kinderheilkunde* and the *Excerpta Medica*. Authorized Translation, with Numerous Additions and Notes, by Herman B. Sheffield, M.D., Instructor in Diseases of Children, and Attending Pediatrist (O.P.D.). Flexible Cloth. Pp. XII-544. Price, $3.00 net. Philadelphia: F. A. Davis Co.

A PRACTICAL TREATISE ON NERVOUS EXHAUSTION (Neurasthenia). Its Symptoms, Nature, Sequences, Treatment. By George M. Beard, A.M., M.D., Fellow of the New York Academy of Medicine. Edited, with Notes and Additions, by A. D. Rockwell, A.M., M.D., Neurologist and Electro-therapeutist to the Flushing Hospital. Fifth Edition—Enlarged. Cloth. Pp. 288. Price, $2.00. New York: E. B. Treat & Co. 1905.

EYE, EAR, NOSE AND THROAT NURSING. By A. Edward Davis, A.M., M.D., Professor of Diseases of the Eye in the New York Post-Graduate Medical School and Hospital, and Beaman Douglass, M.D., Professor of Diseases of the Nose and Throat in the New York Post-Graduate Medical School and Hospital. With 32 Illustrations. Extra Cloth. Pp. XVI-318. Price $1.25 net. Philadelphia: F. A. Davis Co.

INFLUENCE OF FOOD PRESERVATIVES AND ARTIFICIAL COLORS ON DIGESTION AND HEALTH. I.—Boric Acid and Borax. (U. S. Department of Agriculture.) By H. W. Wiley, M.D., with the Collaboration of W. D. Bigelow, Chief of the Division of Foods and Others. Paper. Pp. 477. Washington: Government Printing Office. 1904.

TWENTY-THIRD ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF THE STATE OF RHODE ISLAND for the Year Ending Dec. 31, 1900, and Including the Report on the Registration of Births, Marriages and Deaths in 1899. Cloth. Pp. 312. Providence: E. L. Freeman & Sons. 1904.

PROTECTIVE INOCULATION AGAINST ASIATIC CHOLERA. (An Experimental Study.) By Richard P. Strong, M.D. (Department of the Interior, Bureau of Government Laboratories. Biological Laboratory.) Paper. Pp. 52. Manila: Bureau of Public Printing. 1904.

TRANSACTIONS OF THE TWENTY-SIXTH ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION held at Atlantic City, N. J., June 2, 3 and 4, 1904. Cloth. Pp. 360. New York: Published by the Association. 1904.

TWENTY-SECOND ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF INDIANA for the Fiscal Year Ending Oct. 31, 1903, and Statistical Year Ending Dec. 31, 1903. Cloth. Pp. 222. Indianapolis: Wm. B. Burford. 1904.

TRANSACTIONS OF THE STATE MEDICAL ASSOCIATION OF TEXAS, Thirty-sixth Annual Session. Held at Austin, Texas, April 25, 26, 27, 28 and 29, 1904. Cloth. Pp. 647. Austin: von Boeckmann-Jones Co.

TRANSACTIONS OF THE AMERICAN SURGICAL ASSOCIATION. Volume XXII. Edited by Richard H. Harte, M.D., Recorder of the Association. Cloth. Pp. 307. Philadelphia: Wm. J. Dornan. 1904.

U. S. DEPARTMENT OF AGRICULTURE. TWENTIETH ANNUAL REPORT OF THE BUREAU OF ANIMAL INDUSTRY for the Year 1903. Cloth. Pp. 618. Washington: Government Printing Office. 1904.

STUDIES FROM THE DEPARTMENT OF PATHOLOGY OF THE COLLEGE OF PHYSICIANS AND SURGEONS, Columbia University, N. Y. Vol. IX. For the Collegiate Year 1903-1904. Reprints.

TRANSACTIONS OF THE NEW HAMPSHIRE MEDICAL SOCIETY at the 130th Anniversary Held at Concord, May 19 and 20, 1904. Cloth. Pp. 317. Concord: The Rumford Press. 1904.

REPORT OF THE COMMISSION FOR THE STUDY AND TREATMENT OF "ANEMIA" IN PORTO RICO. Dec. 1, 1904. Paper. Pp. 71. San Juan: Bureau of Printing and Supplies.

BLOOD, URINE, FECES AND MOISTURE. A Book of Tests. By Henry Emerson Wetherill, M.D. Cloth. Philadelphia: George P. Pilling & Son. 1905.

NEW PATENTS.

Recent patents of interest to physicians:

777886. Eyesight testing device. Wm. H. Ely, Middletown, Conn.
778127. Catamenial bandage supporter. Lura B. Greenan, Bristol, Ind.
778062. Forceps. Isaac O. Mullison, Shenandoah, Iowa.
777744. Apparatus for the manufacture of medical or like capsules. Robert Paul, Vienna, Austria-Hungary.
778077. Catamenial appliance. Helen E. Scott, Baltimore, Md.
777826. Apparatus for heating or sterilizing liquids. Joseph Willmann, Chicago.
778621. Electromechanical vibratory massage apparatus. Charles Adams-Randall, New York.
778771. Electromechanical apparatus for vibratory massage. Charles Adams-Randall, New York.
778308. Therapeutic electrode. George H. Day and F. J. Stein, Louisville, Ky.
778570. Invalid bed. James A. Devore, Pittsburg, and S. C. Yount, Wilkinsburg, Pa.
778644. Obstetrical device. Mary A. Easterly, Ava, Ill.
778311. Fountain siphon syringe. Linley S. Grisell, Clyde, Kan.
778783. Producing a nutritive substance from blood. Julius Hofmeier, Vienna, Austria-Hungary.
778667. Blackleg vaccine and making same. Elijah M. Houghton, Detroit, Mich.
778750. Pill or tablet machine. Frank P. Kirzinger, Louisville, Ky.
778684. Surgical knife. Leopold Lewis, Strasburg, Germany.
778268. Instrument or other case. Gustave Rehmann, Newark, N. J.
779174. Syringe. Alcinous B. Jamison, New York.
779290. Making sodium acetate. Iens P. Lihme, Cleveland, Ohio.
778879. Syringe. Anton Molinari, Woodridge, N. J.
779178. Liquid dropper. Louis Perotti, Newark, N. J.
778896. Pneumatic massage apparatus. Irvin Rhodes, Kalamazoo, Mich.
779144. Stethoscope. Henry G. A. I. Wieder, London, England.
779338. Tube for containing surgical articles. Seward W. Williams, East Orange, N. J.